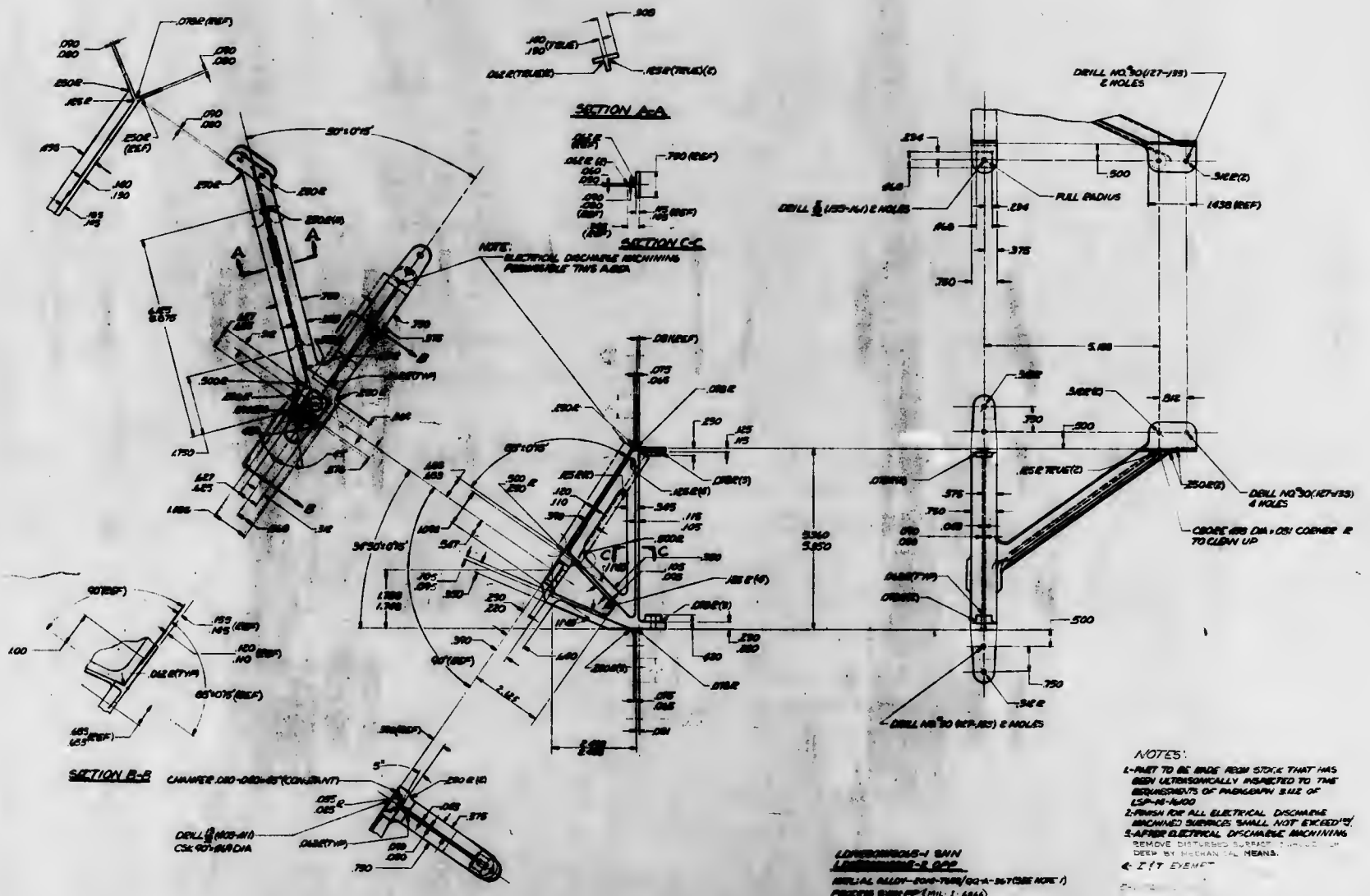
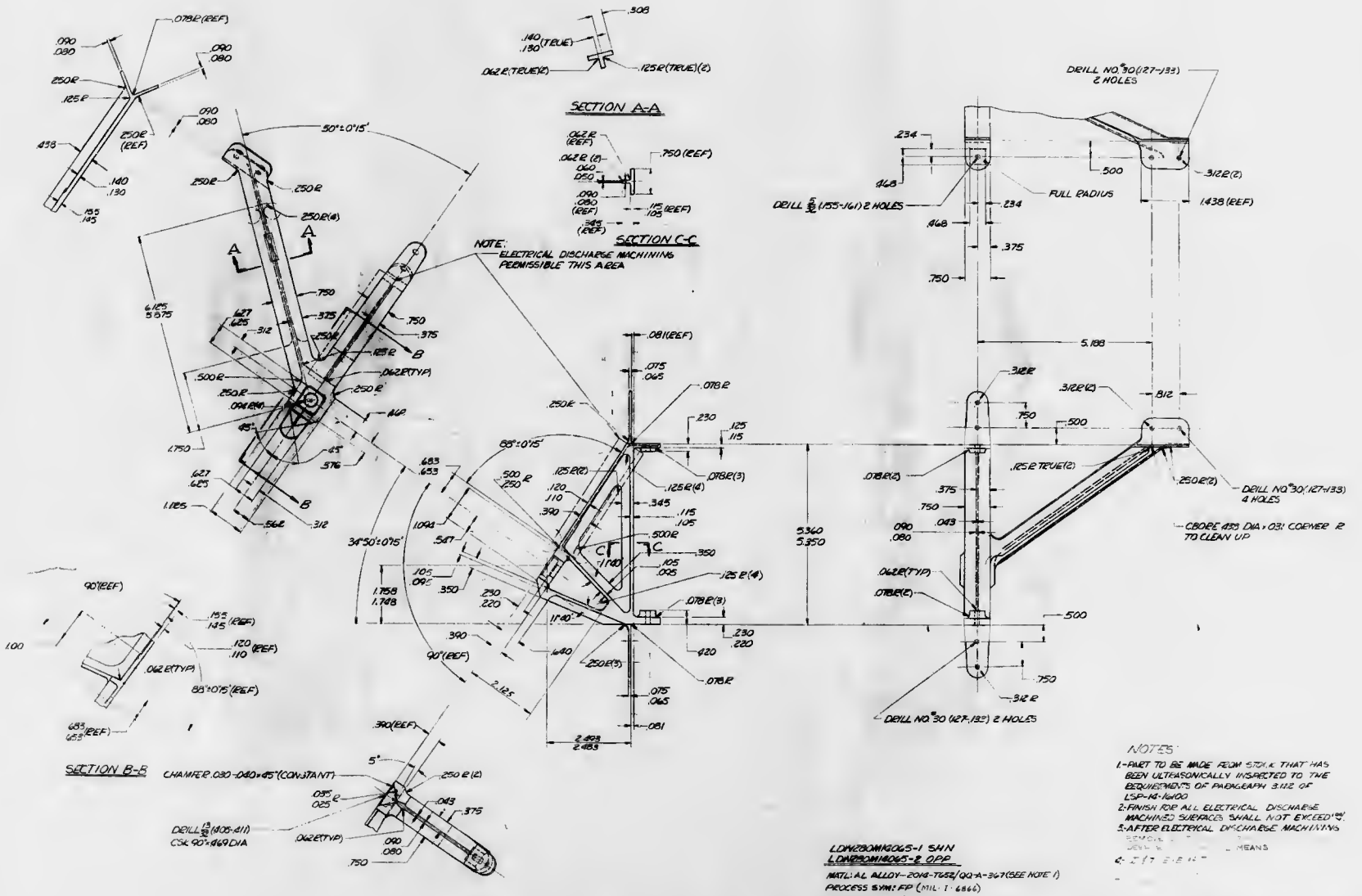

SECTION A-A
SECTION C-C
SECTION B-B
NOTE: ELECTRICAL DISCHARGE MACHINING PERMISSIBLE THIS AREA
DRILL NO 30(.127-.133) 2 HOLES
DRILL NO 30(.127-.133) 4 HOLES
DRILL NO 30 (.127-.133) 2 HOLES
FULL RADIUS
5.340
5.650
5.188
.500
.750
.375
.438 (REF)
.394
.346
.250
.090
.080
.060
.030
.020
.010
.005
.000
.500 R
.250 R
.100 R
.090 R
.080 R
.060 R
.030 R
.020 R
.010 R
.005 R
.000 R
.250 R (4)
.080 R (4)
.060 R (4)
.030 R (4)
.020 R (4)
.010 R (4)
.005 R (4)
.000 R (4)
.080 R (2)
.060 R (2)
.030 R (2)
.020 R (2)
.010 R (2)
.005 R (2)
.000 R (2)
.438 DIA x .031 CORNER R TO CLEAN UP
.750 R (2)
.346 R
.394 R
.438 R
.500 R
.750 R
.188
.198
.250
.375
.500
.750
.938
1.188
1.198
1.250
1.500
1.750
2.188
2.198
2.250
2.500
2.750
3.188
3.198
3.250
3.500
3.750
4.188
4.198
4.250
4.500
4.750
5.188
5.198
5.250
5.500
5.750
6.188
6.198
6.250
6.500
6.750
7.188
7.198
7.250
7.500
7.750
8.188
8.198
8.250
8.500
8.750


SECTION A-A
SECTION C-C
NOTE: ELECTRICAL DISCHARGE MACHINING PERMISSIBLE THIS AREA
SECTION B-B
DRILL NO 30 (.127-.133) 2 HOLES
DRILL NO 30 (.127-.133) 4 HOLES
CBORE .433 DIA x .03 DEEP FOR 2 TO CLEAN UP
FULL RADIUS
50°±0°15'
34°50'±0°15'
88°±0°15'
90° (REF)
CHAMFER .030-.040 x 45° (CONSTANT)
DRILL 3/8 (.1695-.611) CSK 90° x .869 DIA

NOTES:
1. PART TO BE MADE FROM STOCK THAT HAS BEEN ULTRASONICALLY INSPECTED TO THE REQUIREMENTS OF PARAGRAPH 3.11.2 OF LSP-MG-16100
2. FINISH FOR ALL ELECTRICAL DISCHARGE MACHINED SURFACES SHALL NOT EXCEED 63
3. AFTER ELECTRICAL DISCHARGE MACHINING REMOVE [illegible] BY [illegible] MEANS
4. [illegible]

LDW280MK0065-1 SHN
LDW280MK0065-2 OPP

MATL: AL ALLOY-2014-T652/QQ-A-367 (SEE NOTE 1)
PROCESS SYM: FP (MIL-T-6466)
FINISH NO.: 88 (LSP-M-9830)

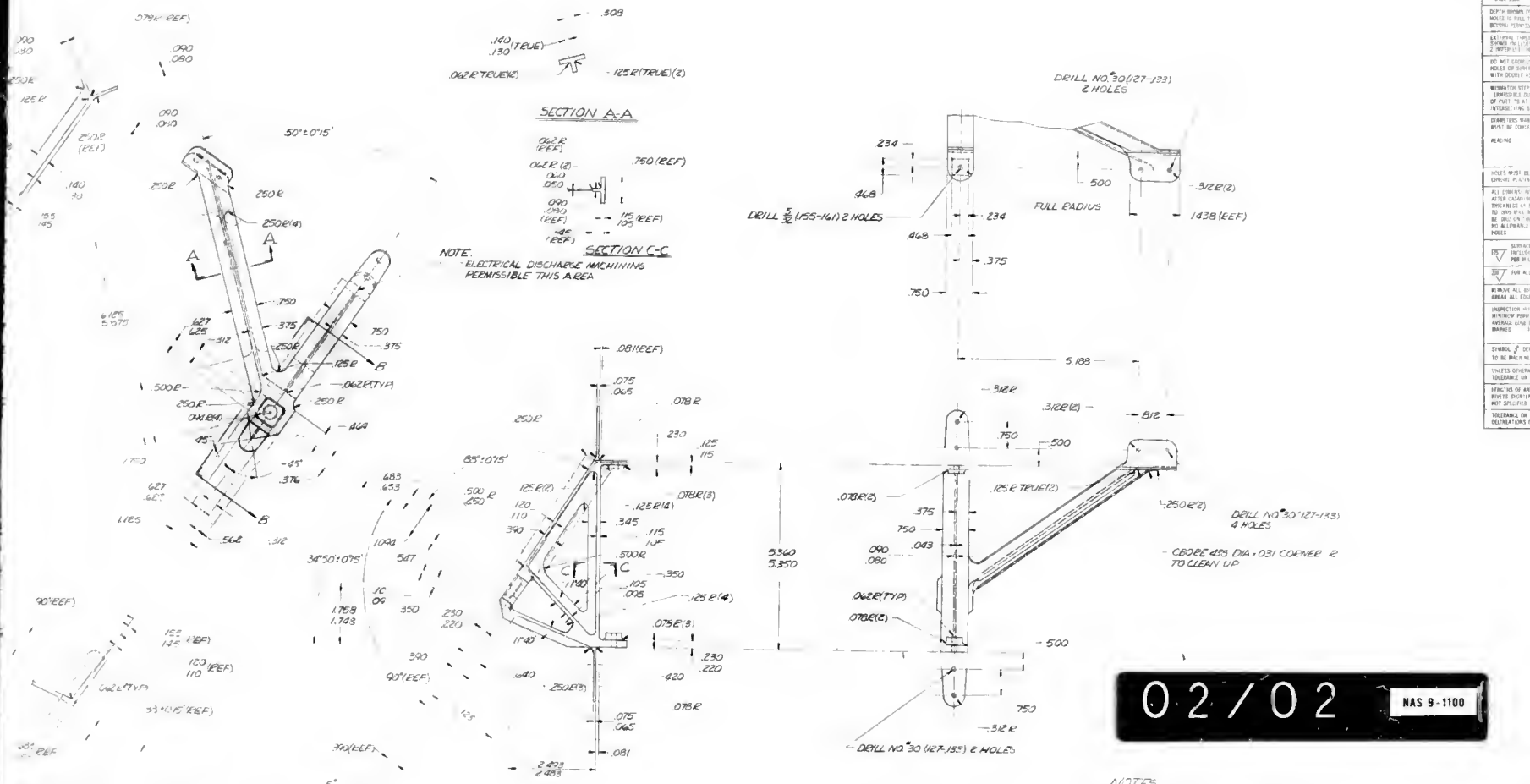
01/02

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L.I., N.Y.

FITTING

26512


SECTION A-A
SECTION C-C
NOTE: ELECTRICAL DISCHARGE MACHINING PERMISSIBLE THIS AREA
DRILL NO. 30 (127-133) 2 HOLES
FULL RADIUS
DRILL 5/32 (155-161) 2 HOLES
DRILL NO. 30 (127-133) 4 HOLES
CBORE .438 DIA x .031 COENEE 2 TO CLEAN UP
DRILL NO. 30 (127-133) 2 HOLES
SECTION B-B
CHAMFER (.090-.080) x 45° (CONSTANT)

02/02 NAS 9-1100

NOTES

1. PART TO BE MADE FROM STOCK THAT HAS BEEN ULTRASONICALLY INSPECTED TO THE REQUIREMENTS OF PARAGRAPH 3.11.2 OF LSP-14-10100
2. FINISH FOR ALL ELECTRICAL DISCHARGE MACHINED SURFACES SHALL NOT EXCEED 63
3. AFTER ELECTRICAL DISCHARGE MACHINING

LDW2B0MK1065-1 SHN
LDW2B0MK1065-2 OPP

MATL: AL ALLOY-2014-T652 (QQ-A-367 (SEE NOTE 1)
PROCESS SYM: EP (MIL-F-6866)
FINISH NO: 28 (LSP-14 4070)

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L.I., N.Y.

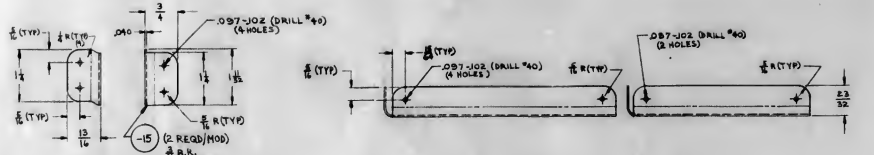
FITTING

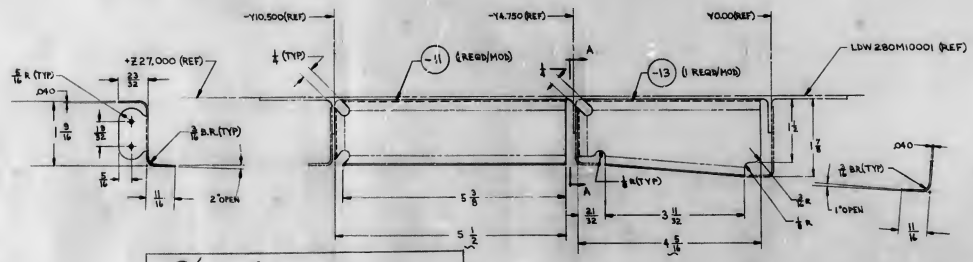
SHUTTLE BOOSTER SAY-AR14 TANK SUPT

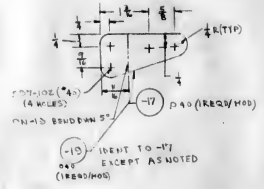
CONTRACT NO. NAS9-1100 DOC TYPE 2

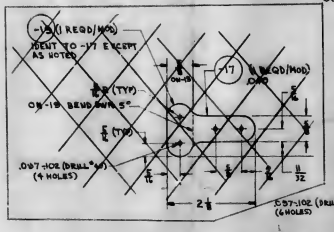
SIZE 26512 DWG NO. LDW2B0MK1065

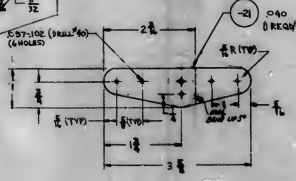
SCALE FULL WHEN PLOTTED SHEET 1 of 1











ALL MATL: AL ALLOY SH. 7075-T6 QQ-A-250/12
FINISH #38
NO TOOLING HOLES IN PARTS
I & T EXEMPT
ALL DIMENSIONS FOR LAYOUT PURPOSES ONLY.
DO NOT INCORPORATE ON DWG.
TOLERANCES ± 1/32, ± .01? ± 1/2°

DWG NOT MADE

LDW280-11924 -11
-13
-15
-17
-19
LDW280-11924 -21

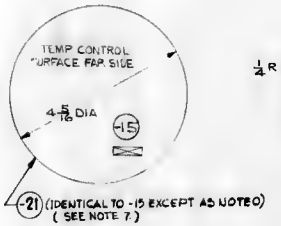
N/A LDW280-28018

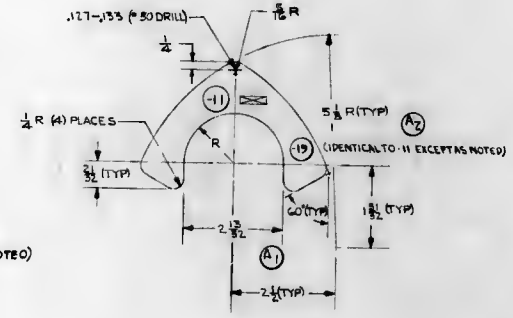
* DWG NOT MADE - EO A1 IS INITIAL DWG RELEASE, CONTRACT NO NAS9-1109, LINE ITEM NO 1, DOC TYPE II

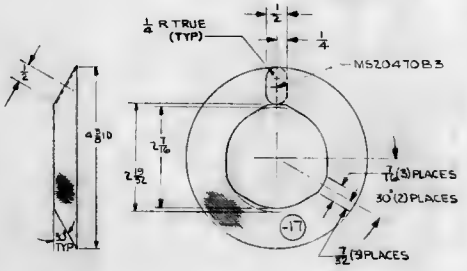
TO PROVIDE SUPPORT FOR DELTA P TRANSDUCERS TANK		LCD-1843	EO A1 INITIAL DRAWING RELEASE. PARTS MADE PER EO		LDW280A8258
LM		LM-239			
			STIFFENER A/S MID SECT +Z27.00 TANK SUPPORT	C	LDW 280-11924 A1
					CDR 7/26/67

NOTES:

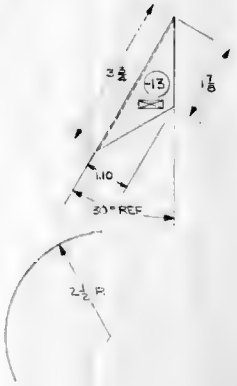
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. MAKE -17 FROM COMMERCIAL QUALITY ALUMINIUM SCREEN 18X18X.017 DIA WIRE, (NEWARK WIRE CLOTH CO-NEWARK, NJ CODE IDENT NO. 43629)
3. INSTALL FASTENERS PER LSP14-15302.
4. FINISH FOR-1 ASSY: CLEAR SULFURIC ACID ANODIZE IN ACCORDANCE WITH MIL-A-8625 TYPE II BOILING WATER SEAL. THE PART SHALL BE PROTECTED WITH STRIPPABLE VINYL COATING #796 PURCHASED FROM CARROL PRODUCTS INC FARMINGDALE N.Y.
5. ANNEALED AREA ADJACENT TO WELD PERMISSIBLE.

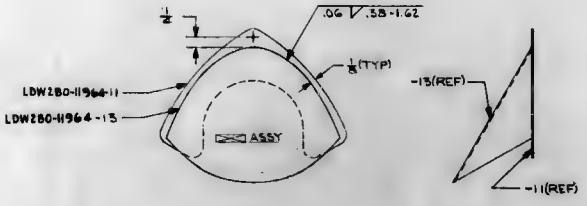






LDW280-11964-3 ASSY

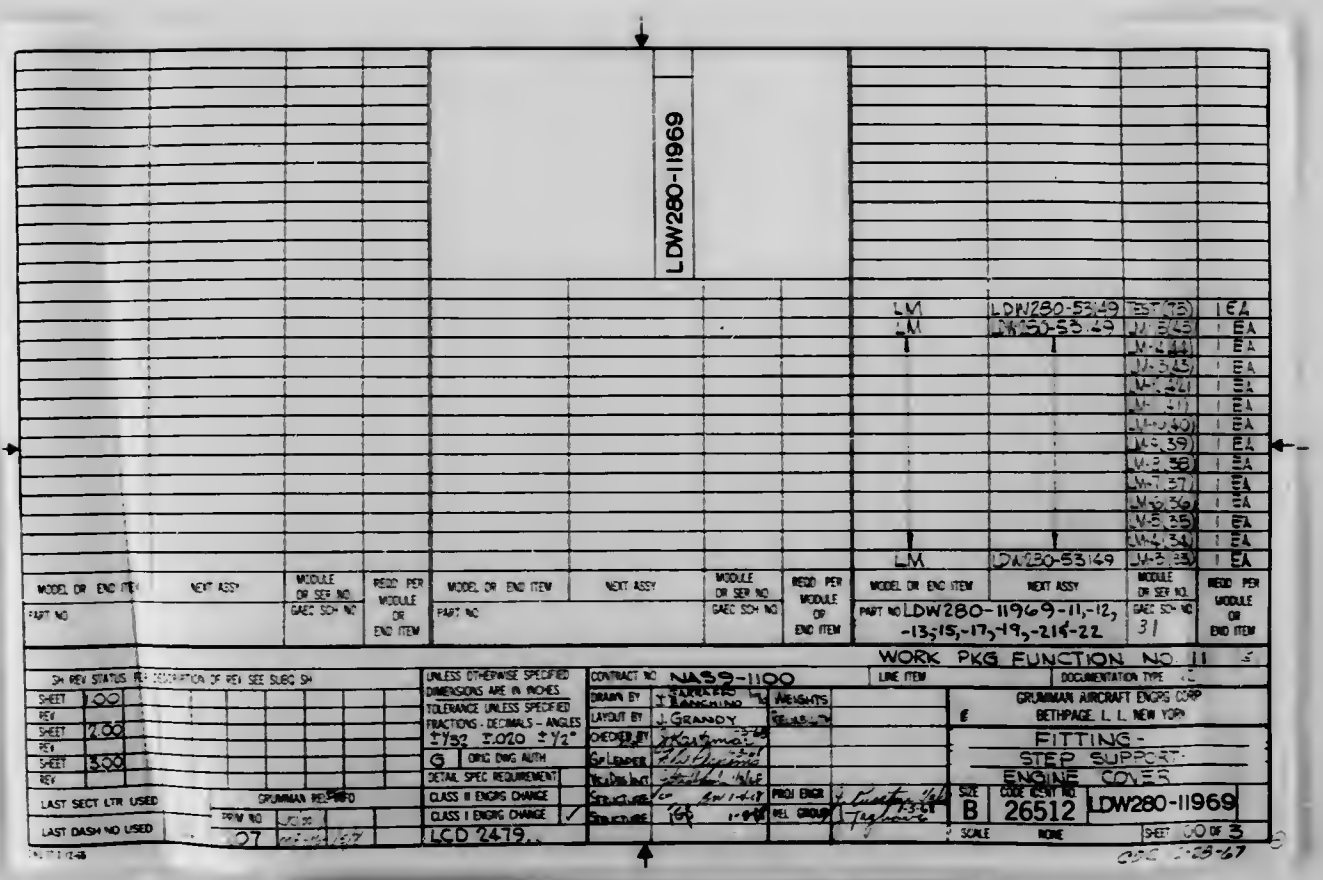




LDW280-11964-1 ASSY

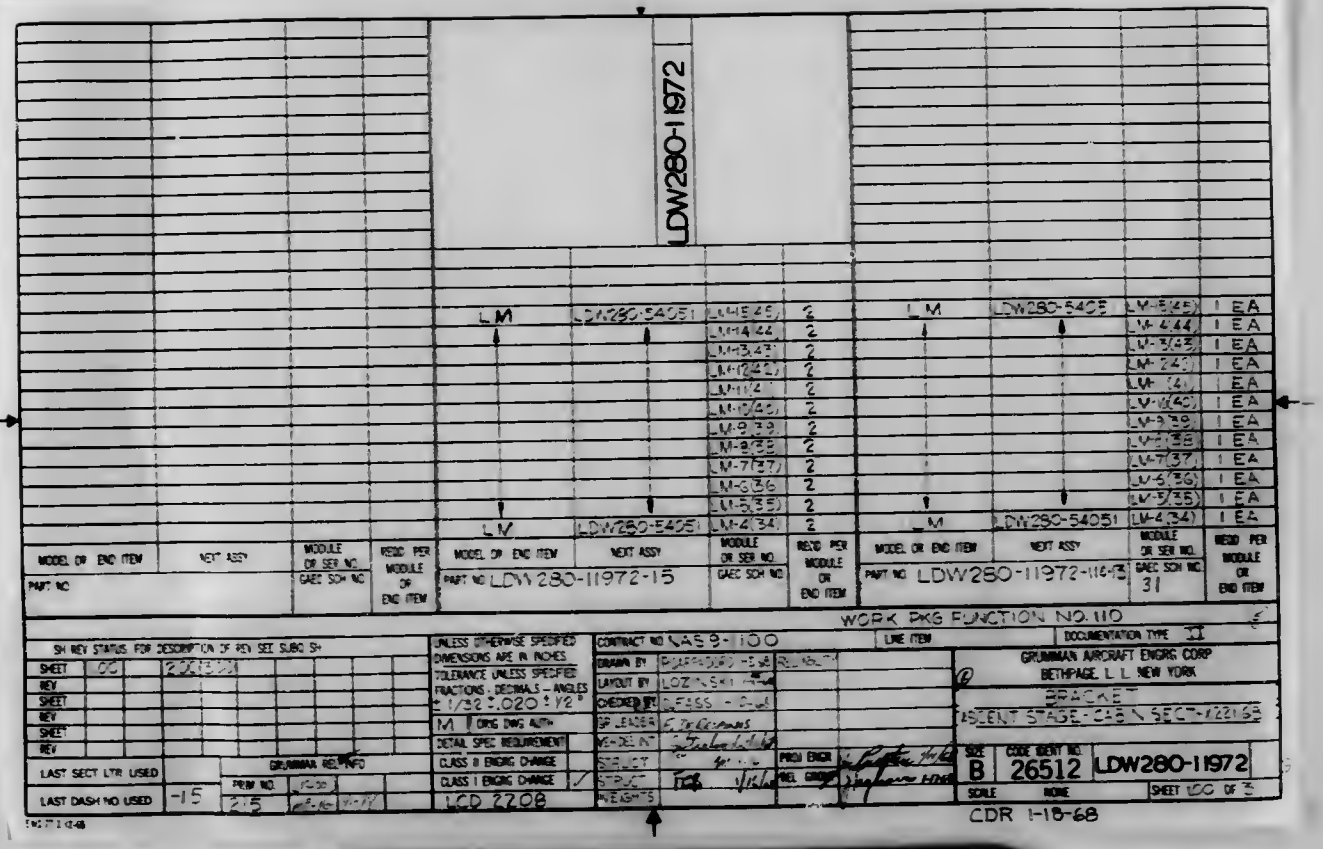
6. MAKE-19 FROM AL ALY CLAD 5N (SKIN QUALITY) 2024-T3 QQ-A-250/5. ONE SURFACE TO BE PREFINISHED WITH ALUMALITE 200/RIVE610 AND PROTECTED WITH STRIPPABLE VINYL COATING #796 PURCHASED FROM CARROLL PRODUCTS INC, FARMINGDALE, LI NY. OPPOSITE SURFACE TO BE FINISH #T6 (LSP14-9010), RUBBER STAMP THIS SIDE.
7. MATERIAL TO BE FINISHED PER LE1280-019. SURFACE DESIGNATED "EXTERIOR" TO BE PROTECTED WITH STRIPPABLE VINYL COATING #796 PURCHASED FROM CARROLL PRODUCTS INC., FARMINGDALE, N.Y.

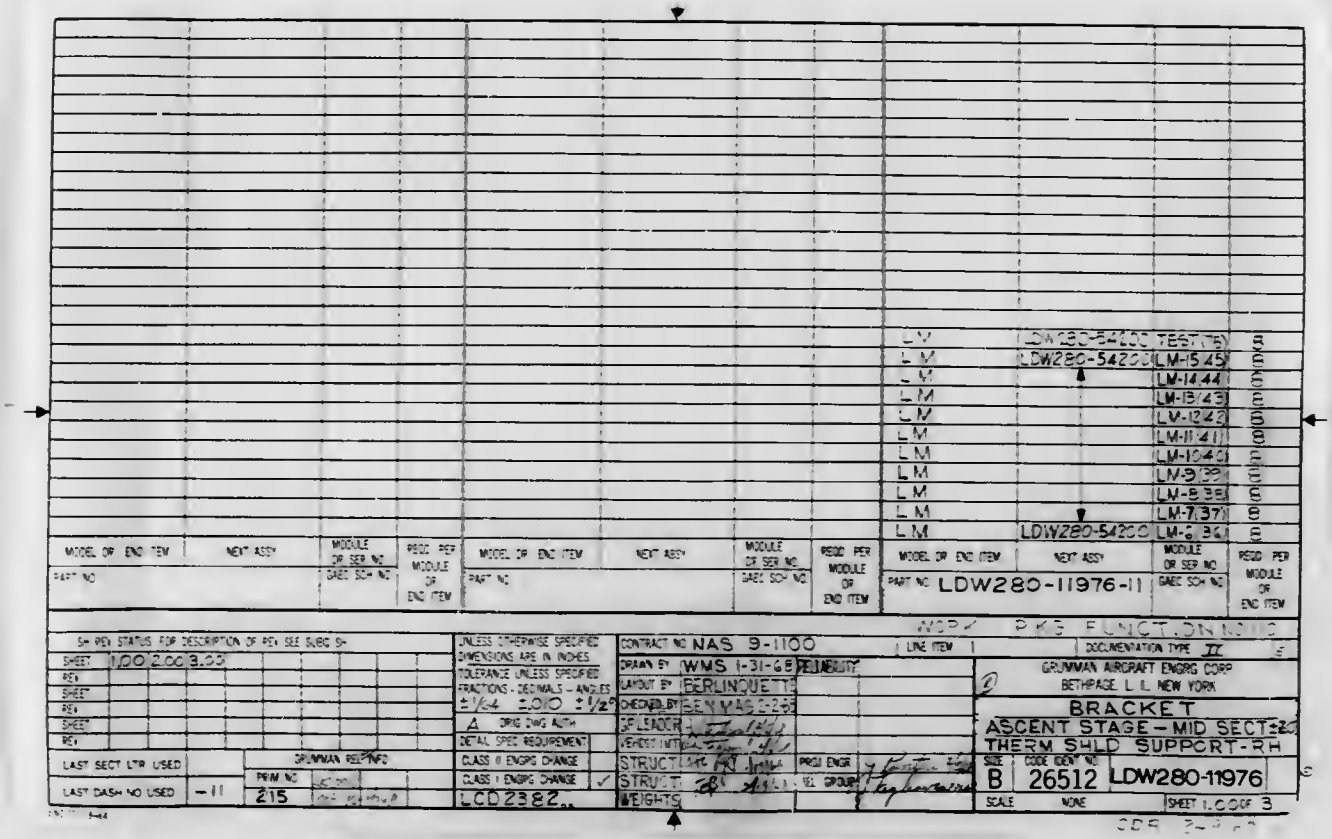
	F	26512	LDW280-11964 B


LDW280-11969
LM LDW280-53149 (EST 75) 1 EA
LM LDW280-53149 M-5 (43) 1 EA
M-4 (44) 1 EA
M-3 (42) 1 EA
M-2 (41) 1 EA
M-1 (40) 1 EA
M-3 (39) 1 EA
M-2 (38) 1 EA
M-1 (37) 1 EA
M-2 (36) 1 EA
M-5 (35) 1 EA
M-4 (34) 1 EA
LM LDW280-53149 M-3 (33) 1 EA
MODEL OR END ITEM
NEXT ASSY
MODULE OR SER NO
GAEC SCH NO
REQD PER MODULE OR END ITEM
PART NO
PART NO LDW280-11969-11,-12, -13,-15,-17,-19,-21,-22
31
WORK PKG FUNCTION NO. 11
SH REV STATUS
SHEET 1.00
REV
SHEET 2.00
REV
SHEET 3.00
REV
LAST SECT LTR USED
LAST DASH NO USED
GRUMMAN RELEASED
PRIM NO
07
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
G ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD 2479
CONTRACT NO NAS9-1100
LINE ITEM
DOCUMENTATION TYPE
DRAWN BY J. LANCHINO
LAYOUT BY J. GRANDY
CHECKED BY
GP LEADER
WEIGHTS
PROJ ENGR
REL GROUP
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L.I. NEW YORK
FITTING - STEP SUPPORT - ENGINE COVER
SIZE B
CODE IDENT NO 26512
LDW280-11969
SCALE NONE
SHEET 00 OF 3
GAC 2-68-67

01

NAS 9-1100


LDW280-11972
LM
LDW280-54051
LM-5(45) 2
LM-4(44) 2
LM-3(43) 2
LM-2(42) 2
LM-1(2) 2
LM-1(40) 2
LM-9(39) 2
LM-8(38) 2
LM-7(37) 2
LM-6(36) 2
LM-5(35) 2
LM-4(34) 2
LM
LDW280-54051
LM-5(45) 1 EA
LM-4(44) 1 EA
LM-3(43) 1 EA
LM-2(42) 1 EA
LM-1(2) 1 EA
LM-1(40) 1 EA
LM-9(39) 1 EA
LM-8(38) 1 EA
LM-7(37) 1 EA
LM-6(36) 1 EA
LM-5(35) 1 EA
LM-4(34) 1 EA
MODEL OR END ITEM
NEXT ASSY
MODULE OR SER NO.
GAEC SCH NO.
REQD PER MODULE OR END ITEM
PART NO LDW280-11972-15
PART NO LDW280-11972-116-12
31
WORK PKG FUNCTION NO. 110
CONTRACT NO NAS 9-1100
DOCUMENTATION TYPE II
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I. NEW YORK
BRACKET
ASCENT STAGE - CAB N SECT - 221.65
SIZE B
CODE IDENT NO. 26512
LDW280-11972
SCALE NONE
SHEET 100 OF
LCD 2208
CDR 1-18-68
01
NAS 9-1100



MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO	RQD PER MODULE OR END ITEM
LM	LDW280-54200	TEST TB	1
LM	LDW280-54200	LM-15 45	1
LM		LM-14 44	1
LM		LM-13 43	1
LM		LM-12 42	1
LM		LM-11 41	1
LM		LM-10 40	1
LM		LM-9 39	1
LM		LM-8 38	1
LM		LM-7 37	1
LM	LDW280-54200	LM-6 36	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO	RQD PER MODULE OR END ITEM
PART NO LDW280-11976-11		GAEC SCH NO	

MOD PKG FUNCTIONAL

SH REV STATUS FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	2.00	3.00
REV			
SHEET			
REV			
SHEET			
REV			

LAST SECT LTR USED

LAST DASH NO USED — 11

GRUMMAN REL INFO

PRIM NO 215

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/64 ±.010 ±1/2°
A DRIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD2382

CONTRACT NO NAS 9-1100
LINE ITEM
DRAWN BY WMS 1-31-68 RELIABILITY
LAYOUT BY BERLINQUETTE
CHECKED BY BEN MAS 2-2-68
GP LEADER
VENDOR INTER
STRUCT
STRUCT
WEIGHTS
PROJ ENGR
SEL GROUP

DOCUMENTATION TYPE II

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

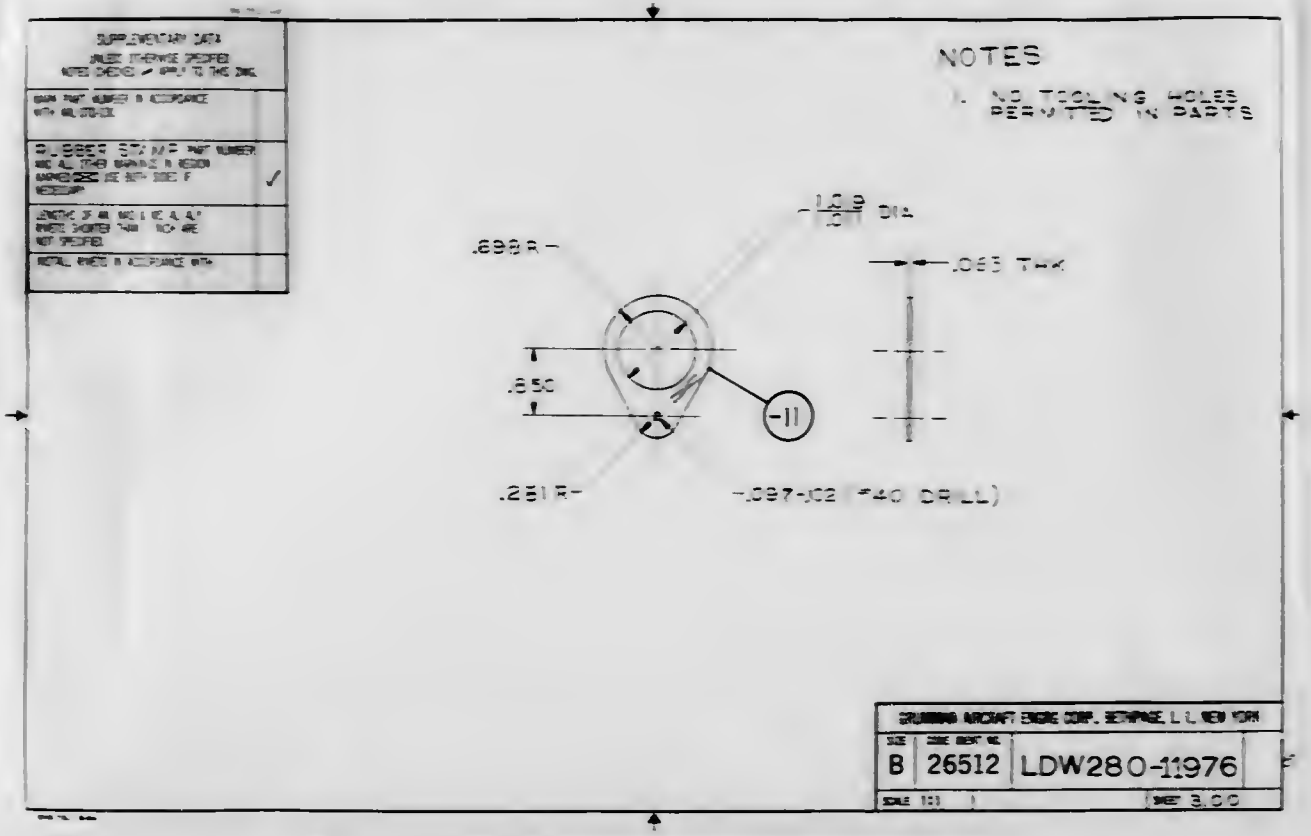
BRACKET
ASCENT STAGE - MID SECT
THERM SHLD SUPPORT - RH

SIZE B | CODE IDENT NO 26512 | LDW280-11976
SCALE NONE | SHEET 1 OF 3

CDR

01

NAS 9-1100


NOTES
1. NO TOOLING HOLES PERMITTED IN PARTS
.698R
.850
.251R
-11
.063 THK
-.097-.102 (#40 DRILL)
B
26512
LDW280-11976

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO	SHEET NO	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	QUAL APPD
A	1	3.00, 1.10		O		✓		A1, LCD2360, 2501	TRIMMED -19 & ADDED SH 1.10	LM-3(13) THRU LM-15(45)			A. BISHOP 3-21-68		
	2	3.00		O				LCD2360, 2501	TRIMMED -11, -13, -15, -17 & -19	LM-3(13) THRU LM-15(45) PA-1(47)					
	3	3.00		LFM 95					REF EO A1 EFF SHOULD BE PA-1(47) & LM-3(13) THRU LM-15(45)		✓				
	4	1.00		O LFM 140		✓		LCD2360	NEXT ASSY LDW280-54851 LM-4 THRU LM-15 WAS LDW280-53851 LM-4 THRU LM-15	LM-4 THRU LM-15					
B	1	1.00, 2.00, 3.00		LFM 140		✓		EO B1 LCD2360, 2501	SCRAPPED -19 CREATED -21	LM-3 THRU LM-15		-19	G. ENGEL 5-23-68		
	2	1.00, 1.00, 3.00				✓		LCD 2360	ADDED -11-1, -13-1, -15-1, -17-1 & -19-1 REVISED EFF TO -11, -13, -15 & -17, LM-3 & PA-1 WAS LM-3 THRU LM-15 & PA-1.	LM-4 THRU LM-15	✓				
	3	1.00, 1.00, 3.00				✓		LCD-2360	ADDED -23 FOR LM-3. REMOVED -21	LM-3 THRU LM-15		-21			
C	1	1.10, 3.00, 1.00		LFM 140					INC EO C1	LM-3 THRU LM-15			F. ALESSIO 11-14-68		
	2	1.10, 3.00		LFM 140 LFM 95					INC EO C2	LM-3 THRU LM-15 & PA-1					
	3	1.10		LFM 140 LFM 95					INC EO C3	LM-3 THRU LM-15 & PA-1					
	4	1.10, 3.00		LFM 140					INC EO C4	LM-4 THRU LM-15					
	5	1.10, 3.00							INC EO C5	LM-4 THRU LM-15					
	6			LFM 140		✓		LCD 2360 LCD 2501	REF EO C1 "NOT APPLICABLE" -21 PREVIOUSLY REMOVED PER B3 CHANGE	LM-3 THRU LM-15	✓				
	7	3.00		LFM 140 LFM 95		✓		(R)	REF EO C2 TRIM -11 SHOULD BE TRIM -11 & -11-1 CHANGED CL II TO CL I AND ADDED LCD2360 AND LCD2501	LM-3 THRU LM-15 & PA-1	-11 & -11-1				

	GROUP DSR	WEIGHTS	RELIABILITY	THERMO
B				
C				

FOR CONTINUATION OF REVISIONS SEE SHEET

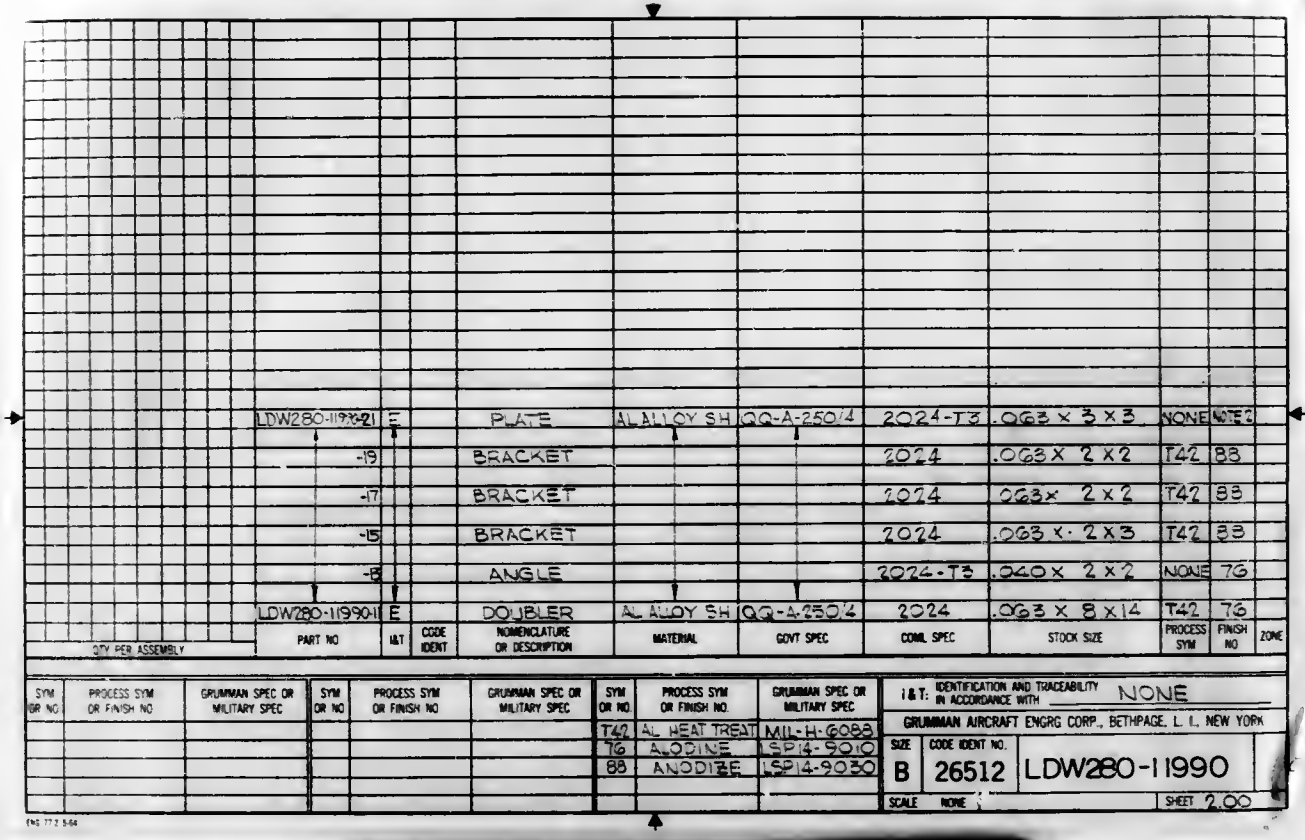
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-11980	C

SCALE NONE SHEET 1.10

01

NAS 9-1100



QTY PER ASSEMBLY	PART NO	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO	ZONE
	LDW280-11990-21	E		PLATE	AL ALLOY SH	QQ-A-250/4	2024-T3	.063 X 3 X 3	NONE	NOTE 3	
	-19			BRACKET			2024	.063 X 2 X 2	T42	88	
	-17			BRACKET			2024	.063 X 2 X 2	T42	88	
	-15			BRACKET			2024	.063 X 2 X 3	T42	88	
	-8			ANGLE			2024-T3	.040 X 2 X 2	NONE	76	
	LDW280-11990-1	E		DOUBLER	AL ALLOY SH	QQ-A-250/4	2024	.063 X 8 X 14	T42	76	

SYM OR NO	PROCESS SYM OR FINISH NO	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO	PROCESS SYM OR FINISH NO	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO	PROCESS SYM OR FINISH NO	GRUMMAN SPEC OR MILITARY SPEC
T42	AL HEAT TREAT	MIL-H-6088
76	ALODINE	LSP14-9010
88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

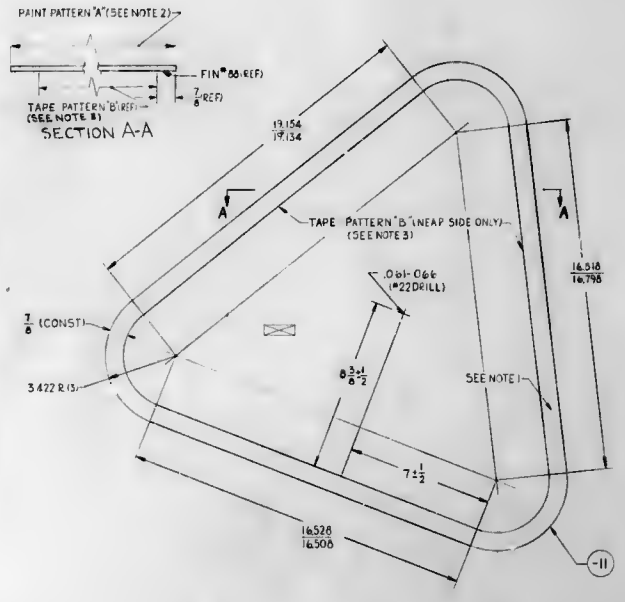
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-11990

SCALE NONE SHEET 2.00

ENG 77.2 5-64

01 NAS 9-1100

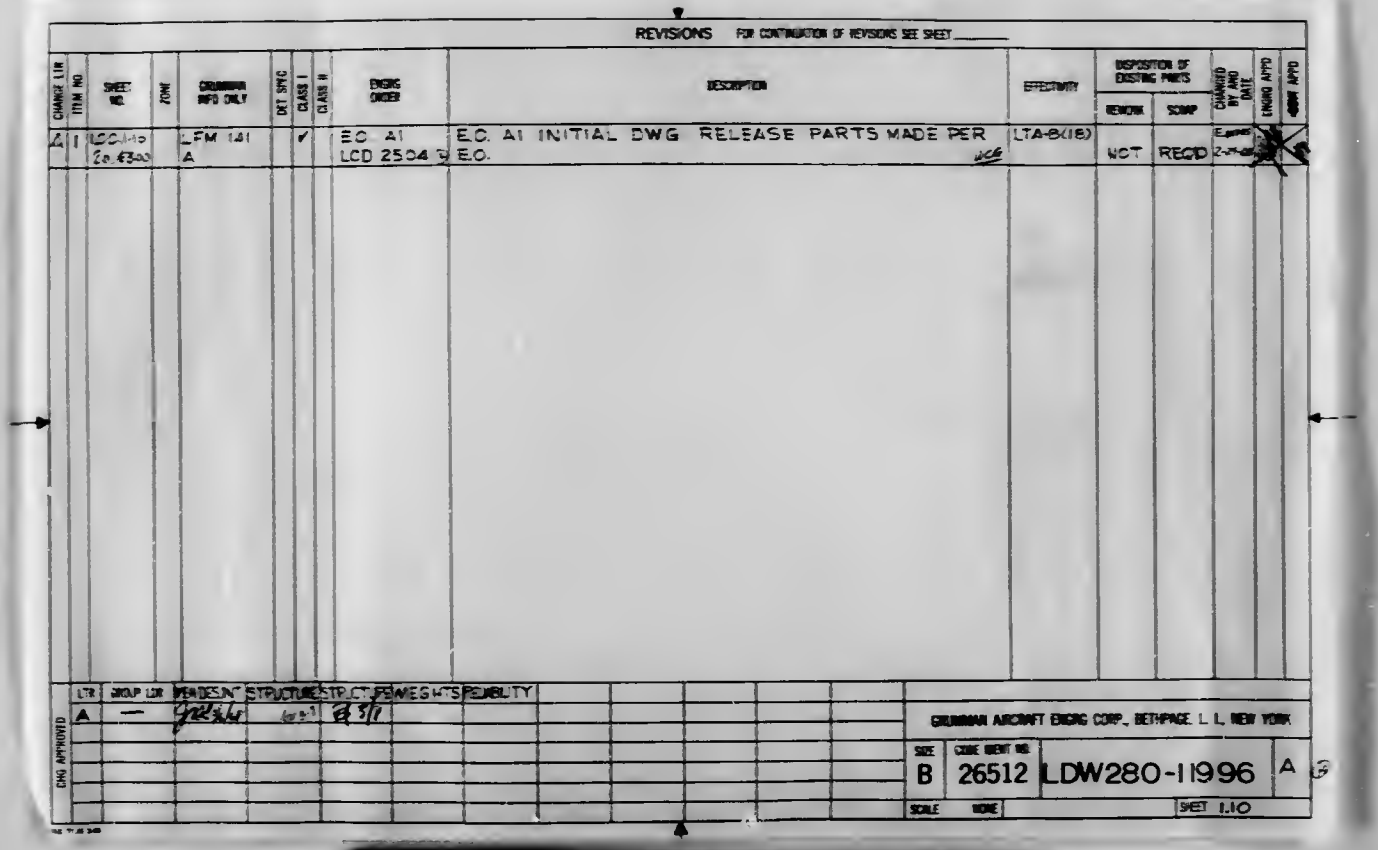


NOTES:

1. FINISH TO BE "88 (ANODIZE) PER LSP 14-9030 EXCEPT THAT TOTAL ANODIZE TIME IS TO BE 80 MINUTES. AFTER ANODIZING, PAINT PATTERN 'A' IS TO BE APPLIED (INBD SIDE, REF) PER NOTE 2 TO THE AREA DESIGNATED IN FIELD OF DWG. TAPE PATTERN 'B' (OUTBD SIDE, REF) IS TO BE APPLIED PER NOTE 3 TO THE AREA DESIGNATED IN FIELD OF DWG.
2. PAINT PATTERN 'A' TO BE APPLIED TO OBTAIN A TOTAL HEMISPHERICAL EMITTANCE (E_{TH}) VALUE OF E_{TH}= .85±.03. ADJUST EMITTANCE PER LPC 280-45 USING PAINT IN LIEU OF TAPE. PAINT W TH 401 B2 GRAY (L5M14-4405) PER L5P 14-4503.
3. TAPE PATTERN "B" TO BE APPLIED TO OBTAIN A TOTAL HEMISPERICAL EMITTANCE (E_{TH}) VALUE OF E_{TH}=.25±.02 ADJUST EMITTANCE PER LPC 280-45.

D	26512	LDW280-11995	A

SCALE: HALF



REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO	SHEET NO	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	MFGR APPD
A	1	LCC-1-10 Zo 43-00		LFM 141 A		✓		E.O. A1 LCD 2504	E.O. A1 INITIAL DWG RELEASE PARTS MADE PER E.O.	LTA-8(18)	NOT	REQ'D	Eppes 2-24-61		

CHG APPROVED	LTR	GROUP LDR	AERODESIGN	STRUCTURES	STRUCT DYNAMICS	WEIGHTS	RELIABILITY
	A	—					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-11996	A

SCALE NONE SHEET 1.10

01

NAS 9-1198

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR ITEM NO	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	MFG APPD
A1	100 UC 200 300		A LEM-141		✓		E.O. A1 LCD2504	E.O.A1-INITIAL DWG RELEASE PARTS MADE PER E.O. ADDED NOTE 1	LTA-8	NOT	REQD.	GARAN 2-29-68	X	X

LTR	GROUP USE	MODEL	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
A							

CHG APPROVED

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-11997	A

SCALE NONE SHEET 110

01

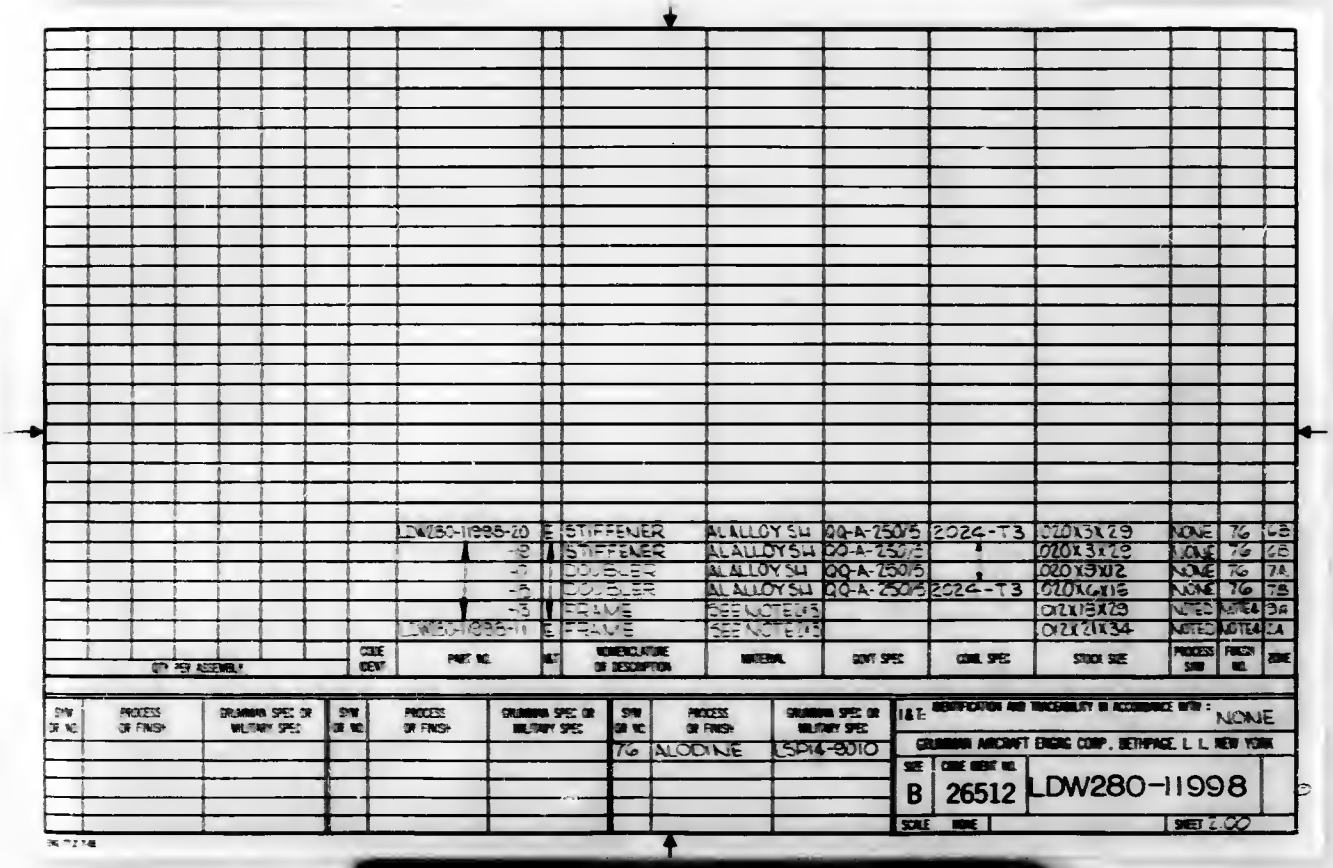
NAS 9-1100

LDW250-1008

LFM

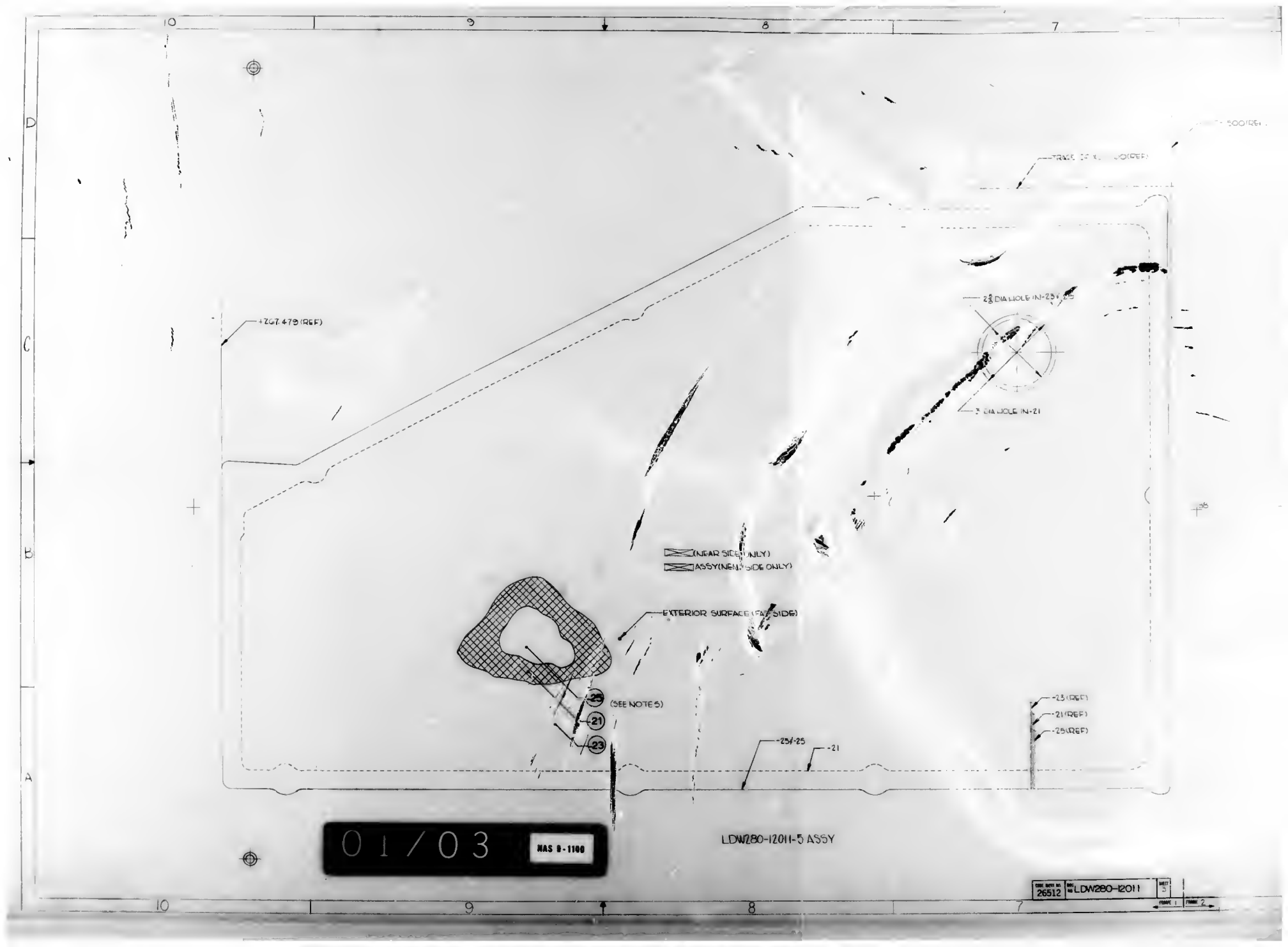
LDW250-998

01



QTY PER ASSEMBLY	CODE IDENT	PART NO.	MAT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SPEC	FINISH NO.	ZONE
		LDW280-11998-20	E	STIFFENER	AL ALLOY SH	QQ-A-250/5	2024-T3	.020X3X29	NONE	7G	6B
		-9		STIFFENER	AL ALLOY SH	QQ-A-250/5	"	.020X3X28	NONE	7G	6B
		-7		DOUBLER	AL ALLOY SH	QQ-A-250/5	"	.020X5X12	NONE	7G	7A
		-5		DOUBLER	AL ALLOY SH	QQ-A-250/5	2024-T3	.020X6X16	NONE	7G	7B
		-3		FRAME	SEE NOTE E13			.012X18X29	NOTE3	NOTE4	3A
		LDW280-11998-11	E	FRAME	SEE NOTE E13			.012X21X34	NOTE3	NOTE4	2A

SPW OR NO.	PROCESS OF FINISH	GRUMMAN SPEC OR MILITARY SPEC


10
9
8
7
D
C
B
A
+Z67.479 (REF)
2 3/8 DIA HOLE IN -23
3" DIA HOLE IN -21
(NEAR SIDE ONLY)
ASSY (NEAR SIDE ONLY)
EXTERIOR SURFACE (FAR SIDE)
-23
(SEE NOTE 5)
-21
-23
-23 (REF)
-21 (REF)
-25 (REF)
-25/-25
-21
01/03
NAS 8-1100
LDW280-12011-5 ASSY
26512
LDW280-12011
SHEET 5
FRAME 1
FRAME 2

LDW280-1202

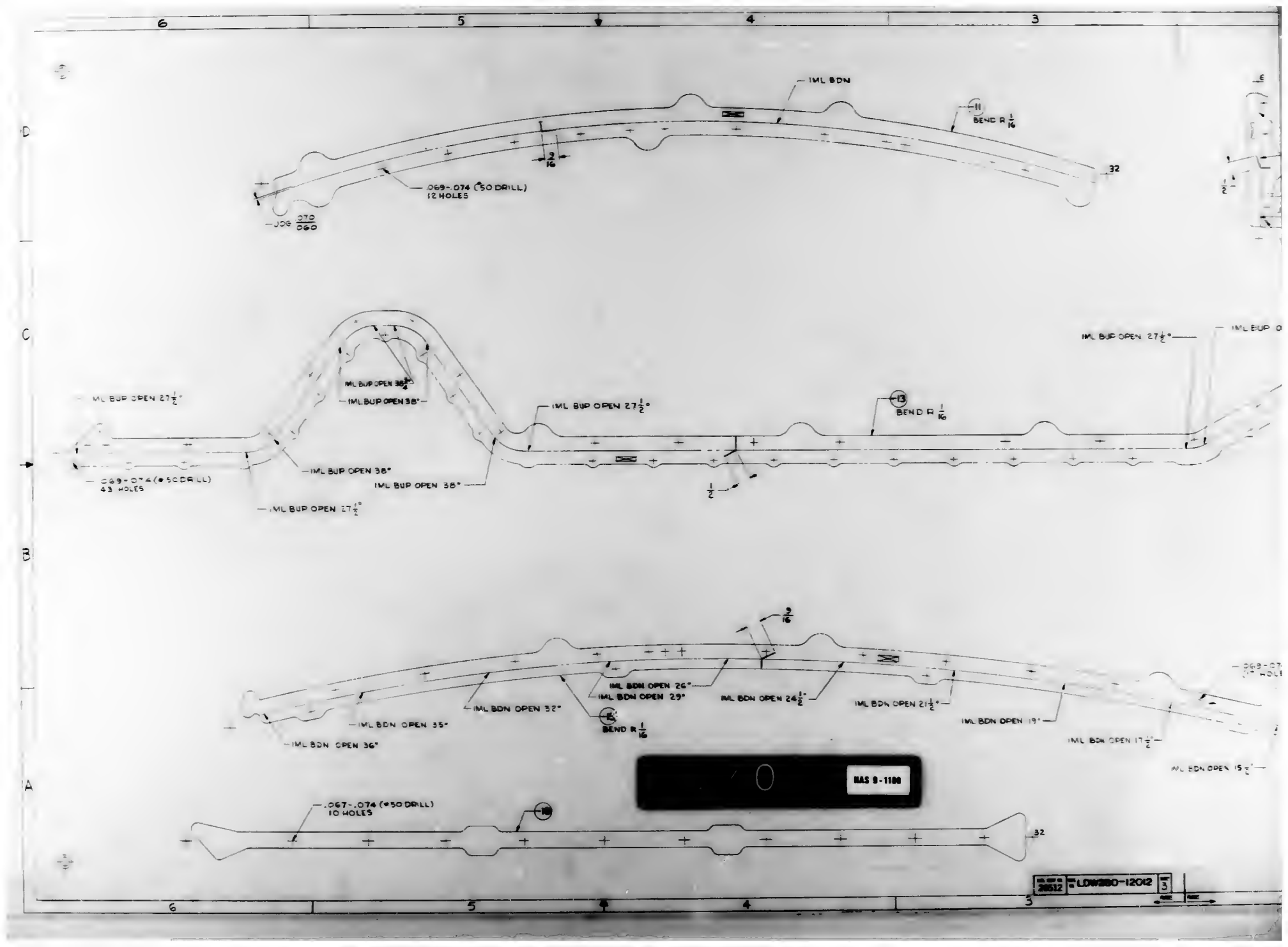
LFM

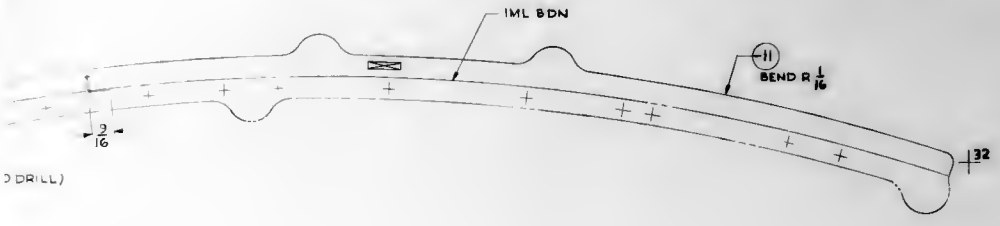
	LDW280-54347	LW-5 45	5 A
		LW-4 44	5 A
		LW-3 43	5 A
		LW-2 42	5 A
		LW-1 41	5 A
		LW6(42)	5 A
		LW5 (39)	5 A
		LW4(38)	5 A
		LW3 37	5 A
		LW2 36	5 A
		LW1 35	5 A
	LDW280-54347	LW-6 40	5 A

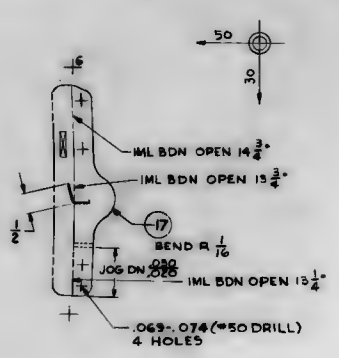
B	26512	LDW280-1202	

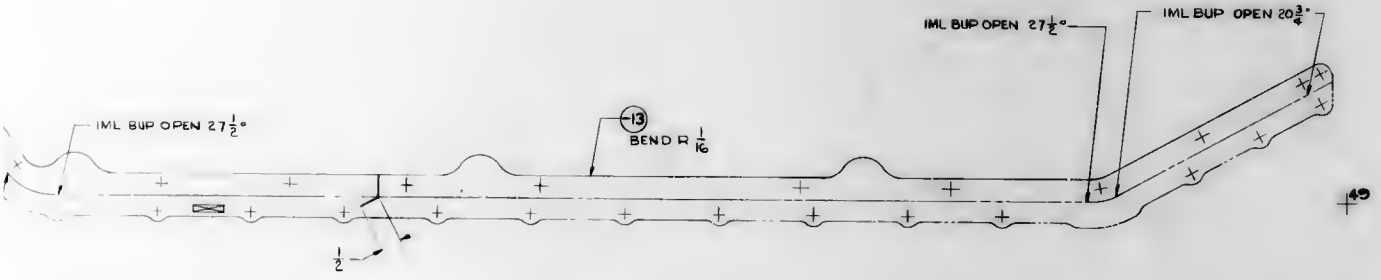
01

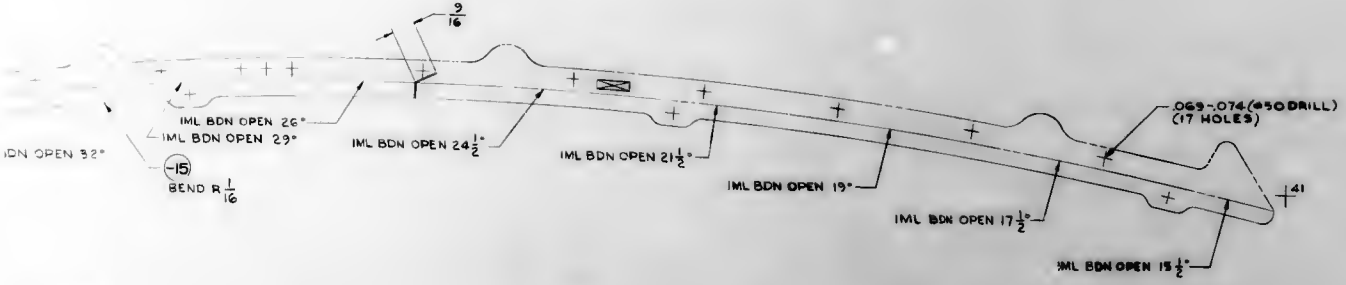
NAS 9-1188


IML BDN
11
BEND R 1/16
32
2/16
.069-.074 (#50 DRILL)
12 HOLES
DOG 070/060
IML BUP OPEN 27 1/2°
IML BUP OPEN 38 3/4°
IML BUP OPEN 38°
IML BUP OPEN 27 1/2°
13
BEND R 1/16
IML BUP OPEN 27 1/2°
.069-.074 (#50 DRILL)
43 HOLES
IML BUP OPEN 38°
IML BUP OPEN 38°
IML BUP OPEN 27 1/2°
1/2
2/16
IML BDN OPEN 26°
IML BDN OPEN 29°
IML BDN OPEN 24 1/2°
IML BDN OPEN 21 1/2°
IML BDN OPEN 19°
IML BDN OPEN 17 1/2°
IML BDN OPEN 15 1/2°
IML BDN OPEN 32°
IML BDN OPEN 35°
IML BDN OPEN 36°
15
BEND R 1/16
NAS 9-1100
.067-.074 (#50 DRILL)
10 HOLES
16
32
20512
LDW280-12012
3









NOTES
1. NO TOOLING HOLES PERMITTED IN PARTS

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
ENTRIES CHECKED √ APPLY TO THIS DWG.

- √ ROUND STAND PART EDGES AND ALL OTHER EDGES IN SOLID MACHINED ONE SIXTH SIZED IF NECESSARY.
- FILLET AND RADIUS CORNER RADII TOLERANCES .XXX TO .XXX ± .XXX; .XX TO .XXX ± .XX; OVER .XXX ± .XXX
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 MIN THDS. BEYOND PERMISSIBLE.
- EXTERNAL THREAD LENGTH SHOWN RELIEVED 2 IMPERFECT THREADS MAX.
- DO NOT CHROMATE PLATE & PAINT SOLELY OR ANODIZE SURFACES MARKED WITH DOUBLE ASTERISK.
- MACHINE STEP OF ± .005 PERMISSIBLE ONE TO CHANGE OF CUTTING AT RIGHT ANGLES TO INTERSECTING SURFACES.
- DIMENSIONS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- PARTS MUST BE KEPT FREE OF CHROMIC PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CHROMATE PLATING. THICKNESS OF PLATE .0001 MIN. TO .0005 MAX. DIM. THICKNESS TO BE .0004 ON TOLERANCED AREAS. NO ALLOWANCE ONE PLATING IN HOLES
- SURFACE ROUGHNESS INCLUDING REAMED HOLES ONE MIN. 63 RMS
- √ ONE ALL DRILLED HOLES
- BREAK ALL EDGES BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION DIMENSION PERPENDICULAR MINIMUM EDGE DISTANCE BETWEEN 15
- BREAK ∫ SHARPER SURFACE TO BE REMOVED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ☐ PLACES IS ± 1/32
- LOCATION OF .XX, DIA & .XXX AL ALY HOLES SHOWN FROM 1 INCH ONE NOT SPECIFIED.
- TOLERANCE ON LISTED DELINEATIONS IS ± 1/32 ✓

02/02

NAS 9-1108

	J	26512	LDW280-12012

LDW280-12012

LDW280-12012

FOR PHOTO REPRODUCTION

2FR

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LED 280 | EO NO 1043
CONTROL INFO NO LDW280B4428

IN M.B FOR THE FOLLOWING DRAWINGS (DASH Nos.* REMOVE LM-4(34)
REQUIREMENT N/A LDW280-54347

DRAWING No.	DASH No.*	CHANGE LETTER
LDW280-12005	-1 & -13	A1
-12008	-11 & -13	A4
-12012	-11,-13,-15,-17 & -19	A1
LDW280-12013	-11,-13 & -15	A3

LFM

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | LCD 2360 PKG 32 SHT 5 (5)

REASON FOR EO: UP-DATE OF LM-4 SHIELDING

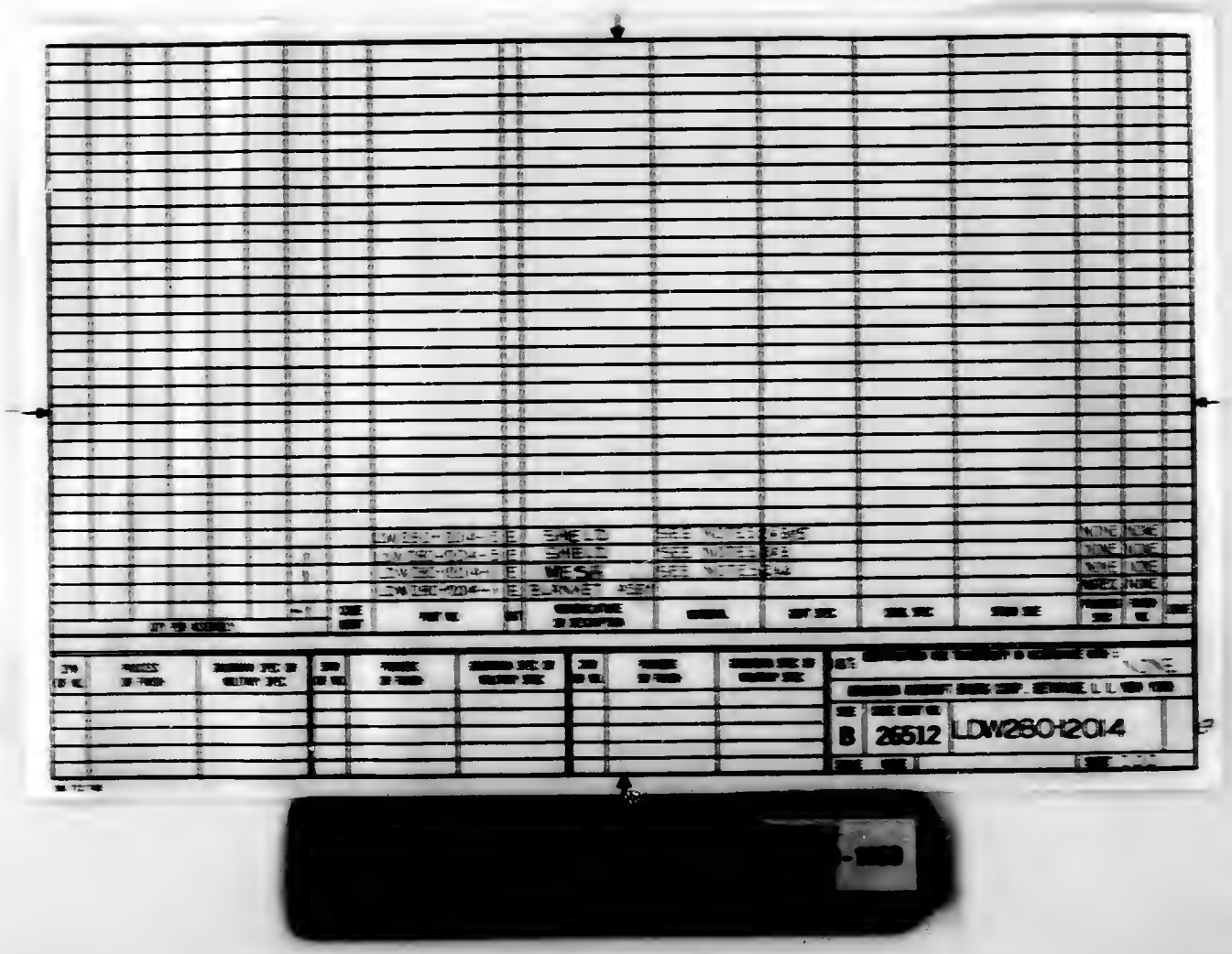
DESCRIPTION OF EO: FOR * REMOVED LM-4(34) EFFECTIVITY

EFFECTIVITY

MODEL	EI	GAEC UNIT NO	SUB CONTR UNIT NO.
LM	LFM140	LM-4(34)	

DRAWING CHANGE NEED: REVISE DWG ✓ | RECOND EO
DISPOSITION OF PARTS: REWORK | SCRAP ✓
APPROVED BY: DATE: VDI | MLI 100 GROUP | GROUP LEADER | SECTION HEAD | LIAISON ENGRG | PROJ ENGRG
PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO: LEO 280
EO NO: 1043

7-15-68 ISSUED BY P. FRANZESE x2033 SECTION VDI GROUP NO. 335 PL 25


B
26512
LDW260-2014

NOTES:
1. TOOLING HOLES PERMITTED IN PARTS
2. FABRICATE 1 BLANKET ASSY IN ACCORDANCE WITH LPC 280-8, DIRECTION OF LAPS OPTIONAL
3. MAKE LDW280-12014-15 FROM .0015 NICHEL FOIL PER AMS 5540E
   MAKE LDW280-12014-15 FROM .0015 NICHEL FOIL COMMERCIALLY PURE 200 OR EQUIVALENT
   MAKE LDW280-12014- FROM LAYER OF NICHEL WIRE CLOTH (MESH)
4. NICHEL WIRE CLOTH (MESH) MAY BE PURCHASED FROM MONTGOMERY METAL FABRIC CO. ORIGINAL BMH WINDSOR LOCKS CONN. CODE IDENT 34725
5. PAINT EXTERIOR SURFACE WITH "PYROMARK" BLACK PAINT PER LPC 250-2

SECTION A-A
NO SCALE

EXTERIOR SURFACE NEAR SIDE

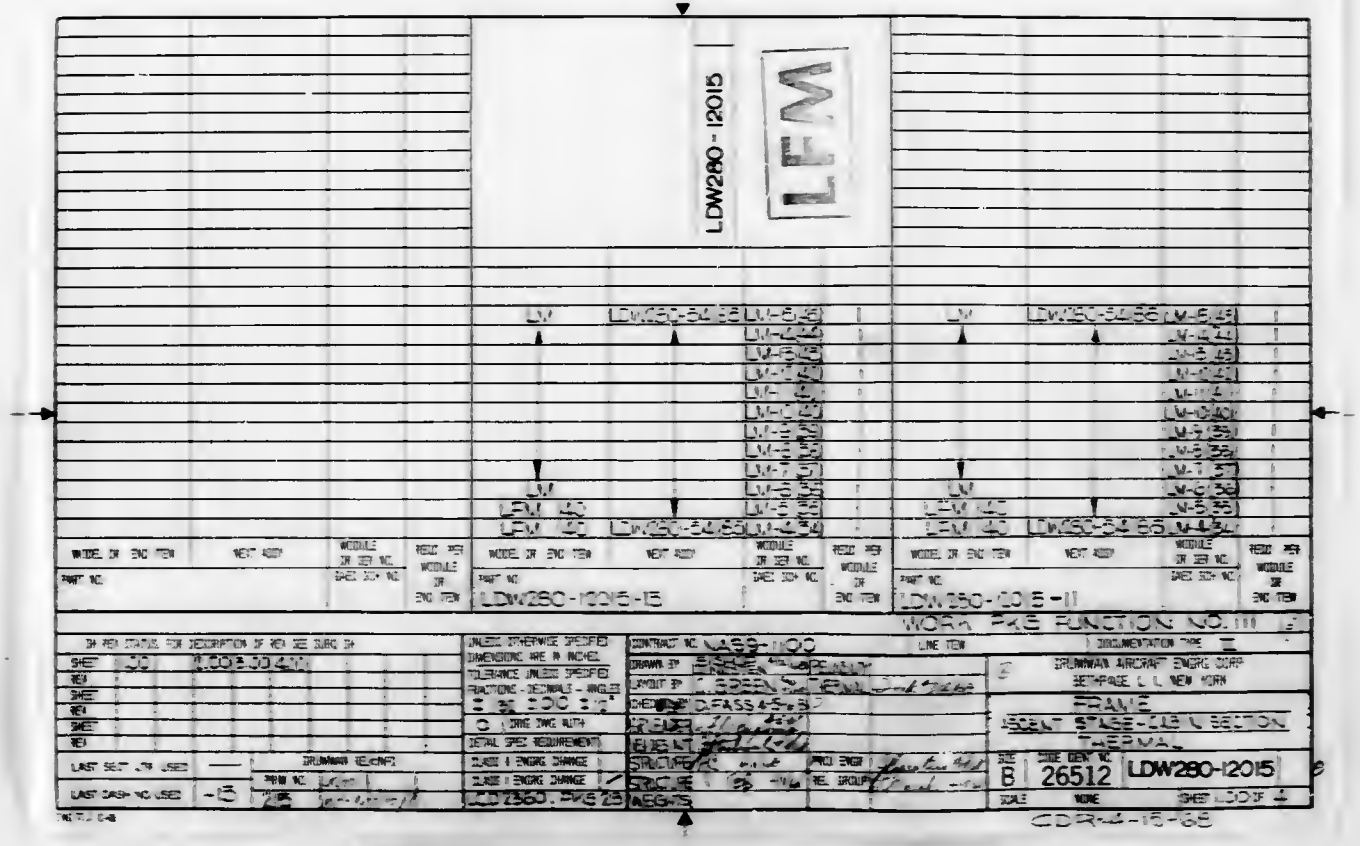
SEE NOTE 2 & 3

TRIM LINE OF -11

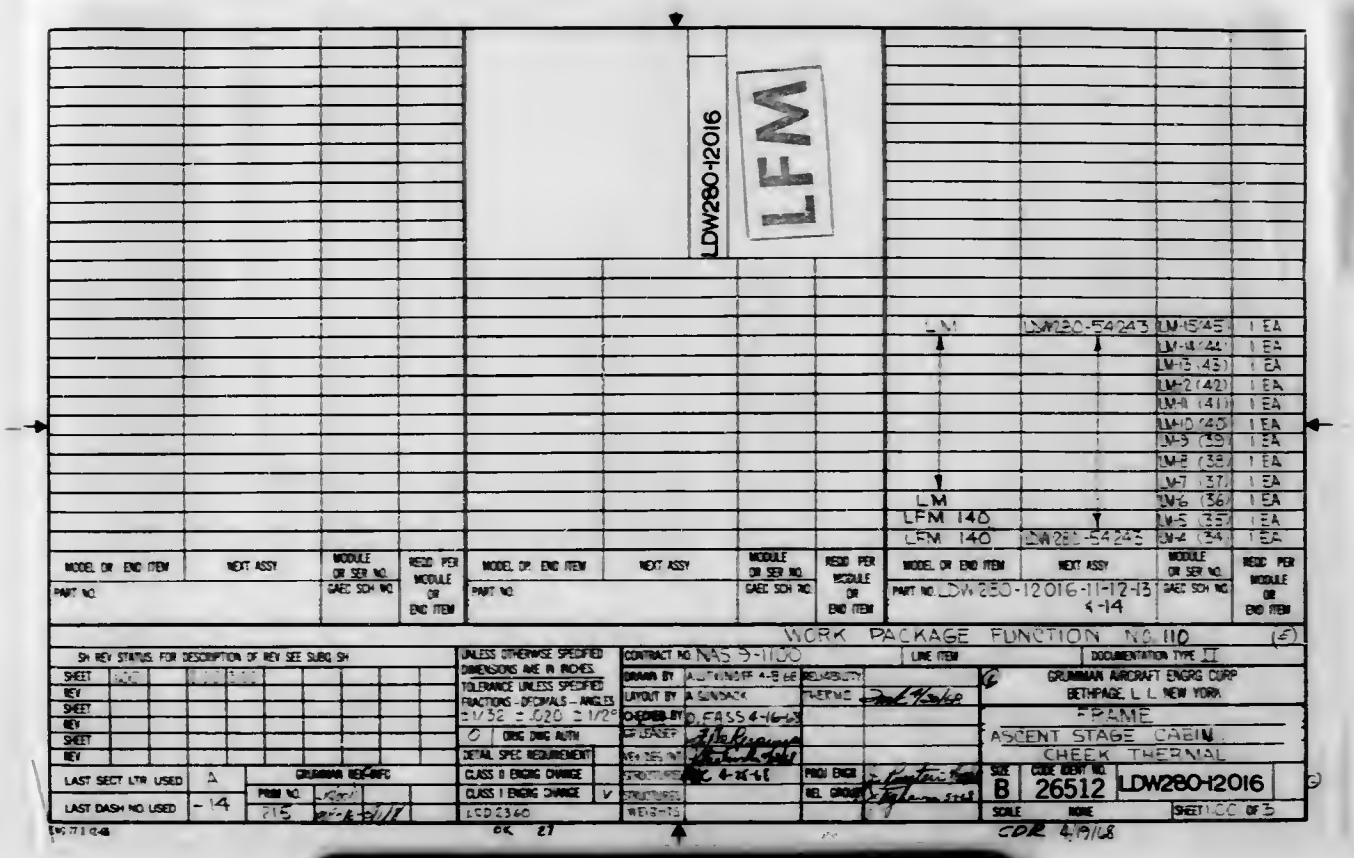
TRIM LINE OF -13 & -15

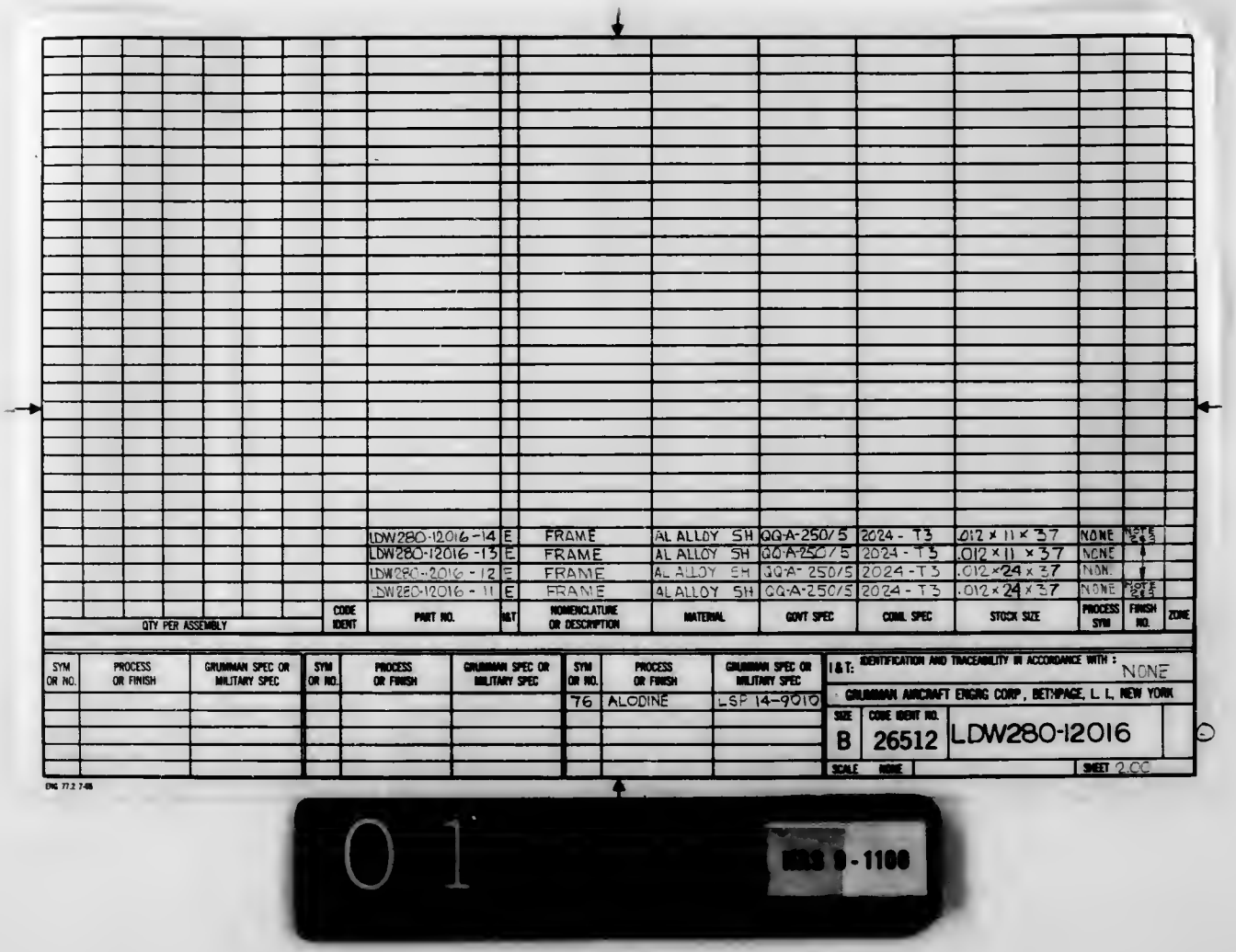
LDW280-12014-1 ASSY

E 28612 LDW280-12014


LDW280-12015
LFM
LDW280-12015-13
LDW280-12015-11
WORK PKG FUNCTION NO. 111
DRUMWAY AIRCRAFT ENGRG CORP
BETHPAGE L I NEW YORK
FRAME
ASSY STAGE-LP C SECTION
THERMAL
SIZE B
SIZE DRW NO. 26512
LDW280-12015
SCALE NONE
SHEET 1 OF 2
CDR-4-15-68

01


LDW280-12016
LFM
LM
LDW280-54243
LM-15 (45) 1 EA
LM-14 (44) 1 EA
LM-13 (43) 1 EA
LM-12 (42) 1 EA
LM-11 (41) 1 EA
LM-10 (40) 1 EA
LM-9 (39) 1 EA
LM-8 (38) 1 EA
LM-7 (37) 1 EA
LM-6 (36) 1 EA
LM-5 (35) 1 EA
LM-4 (34) 1 EA
LM
LFM 140
LFM 140
LDW280-54243
MODEL OR END ITEM
PART NO.
NEXT ASSY
MODULE OR SER NO. GAEC SCH NO.
REQD PER MODULE OR END ITEM
PART NO. LDW280-12016-11-12-13 -14
WORK PACKAGE FUNCTION NO. 110 (5)
SH REV STATUS FOR DESCRIPTION OF REV SEE SUBQ SH
SHEET
REV
LAST SECT LTR USED A
LAST DASH NO USED -14
GRUMMAN RECORDS
PRIM NO.
215
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
0 ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE V
LCD 2360
CONTRACT NO NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II
DRAWN BY A. LITWINOFF 4-5-68
LAYOUT BY A SINDACK
CHECKED BY D. FASS 4-16-68
RELIABILITY
THERMO
PROJ ENGR
REL GROUP
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I. NEW YORK
FRAME
ASCENT STAGE CABIN
CHEEK THERMAL
SIZE B
CODE IDENT NO 26512
LDW280-12016
SCALE NONE
SHEET 100 OF 3
OK 27
CDR 4/9/68
01
NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-12016-14	E	FRAME	AL ALLOY SH	QQ-A-250/5	2024-T3	.012 x 11 x 37	NONE	NOTE 2 & 3	
		LDW280-12016-13	E	FRAME	AL ALLOY SH	QQ-A-250/5	2024-T3	.012 x 11 x 37	NONE		
		LDW280-12016-12	E	FRAME	AL ALLOY SH	QQ-A-250/5	2024-T3	.012 x 24 x 37	NONE		
		LDW280-12016-11	E	FRAME	AL ALLOY SH	QQ-A-250/5	2024-T3	.012 x 24 x 37	NONE	NOTE 2 & 3	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
76	ALODINE	LSP 14-9010

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

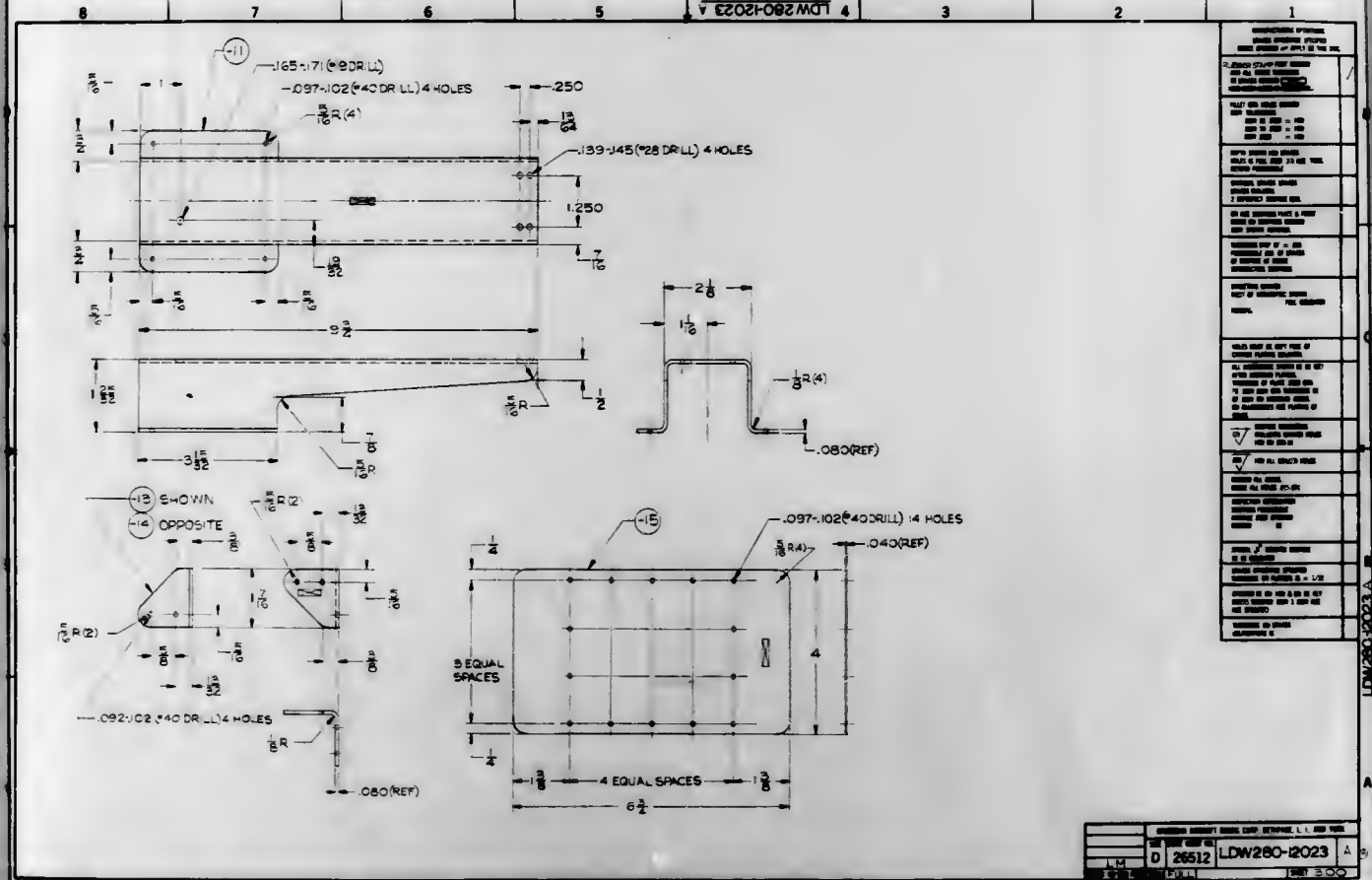
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-12016

SCALE NONE SHEET 2.00

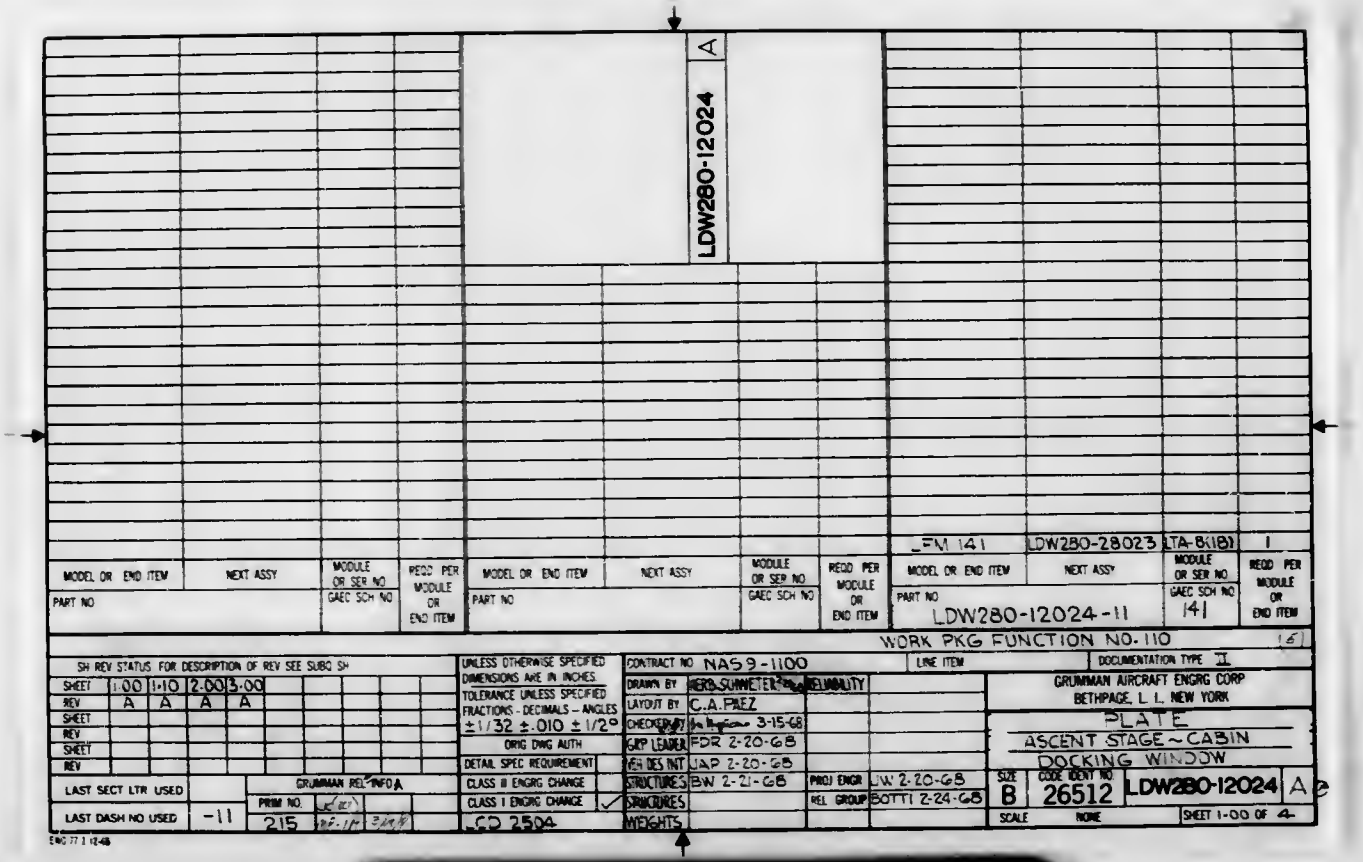
ENG 77.2 7-65

01 MRS 9-1100

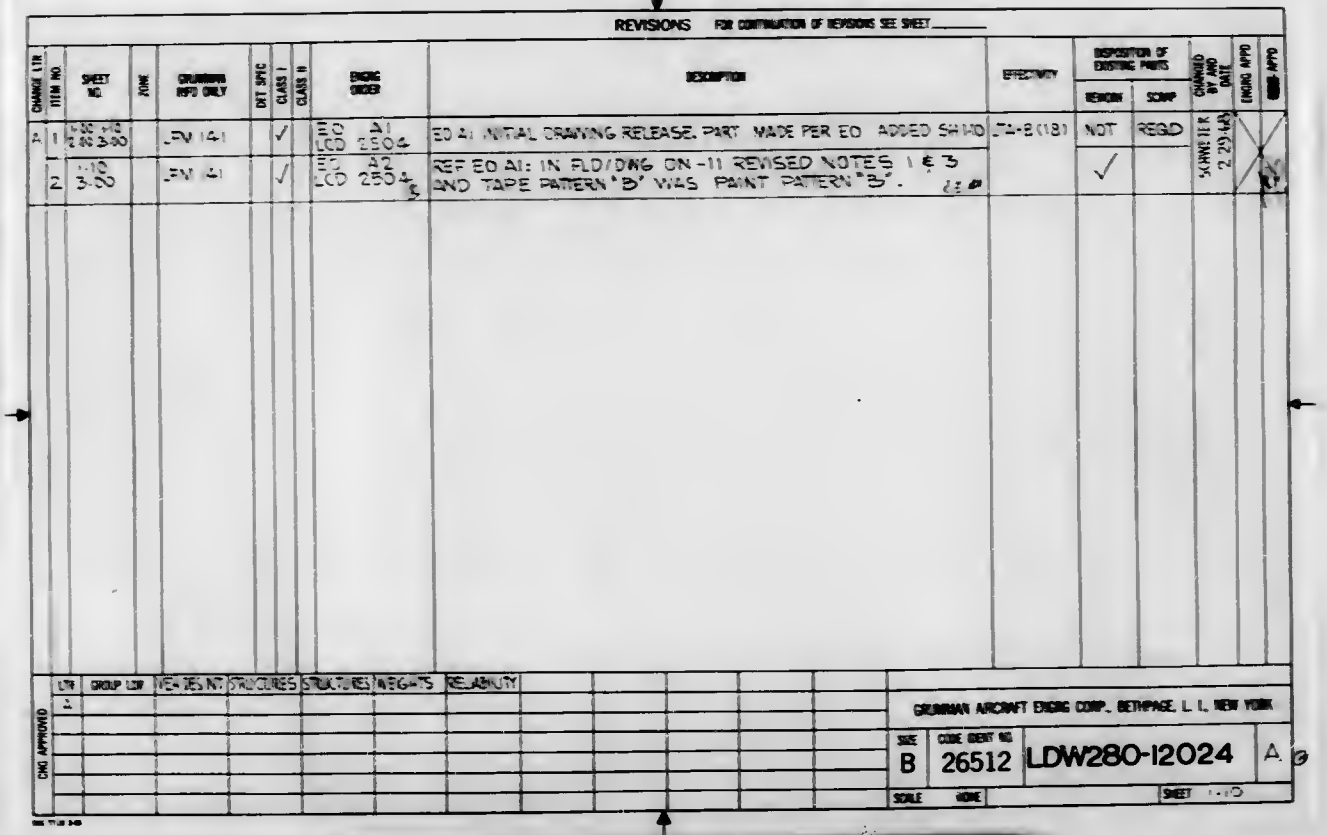


LDW280-12023 A

D	26512	LDW280-12023	A


LDW280-12024
A
MODEL OR END ITEM
NEXT ASSY
MODULE OR SER NO
REQD PER MODULE OR END ITEM
PART NO
GAEC SCH NO
LFM 141
LDW280-28023
LTA-B(1B)
1
PART NO
LDW280-12024-11
141
WORK PKG FUNCTION NO. 110
16
SH REV STATUS FOR DESCRIPTION OF REV SEE SUBQ SH
SHEET 1-00 1-10 2-00 3-00
REV A A A A
LAST SECT LTR USED
LAST DASH NO USED -11
GRUMMAN REL INFO A
PRIM NO. 215
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.010 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
CD 2504
CONTRACT NO NAS9-1100
LINE ITEM
DOCUMENTATION TYPE II
DRAWN BY HERB SUMMETER
RELIABILITY
LAYOUT BY C.A. PREZ
CHECKED BY 3-15-68
GRP LEADER FDR 2-20-68
ASH DES INT JAP 2-20-68
STRUCTURES BW 2-21-68
PROJ ENGR JW 2-20-68
SPACECRAFT
REL GROUP BOTTI 2-24-68
WEIGHTS
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK
PLATE
ASCENT STAGE ~ CABIN
DOCKING WINDOW
SIZE B
CODE IDENT NO 26512
LDW280-12024 A
SCALE NONE
SHEET 1-00 OF 4
ENG 77 1 12-68

01
NAS 9-1100



REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR / ITEM NO	SHEET NO	ZONE	GRUMMAN RFD ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	MFG APPD
A 1	1-00 thru 2-00 3-00		LFM 141		✓		ED A1 LCD 2504	ED A1 INITIAL DRAWING RELEASE. PART MADE PER ED ADDED SH 1-10	74-8 (181)	NOT	REQD	SCHNEIER 2-25-68		
2	1-10 3-00		LFM 141		✓		ED A2 LCD 2504	REF ED A1: IN FLD/DWG ON -11 REVISED NOTES 1 & 3 AND TAPE PATTERN "B" WAS PAINT PATTERN "B".		✓				

CHG APPROVED

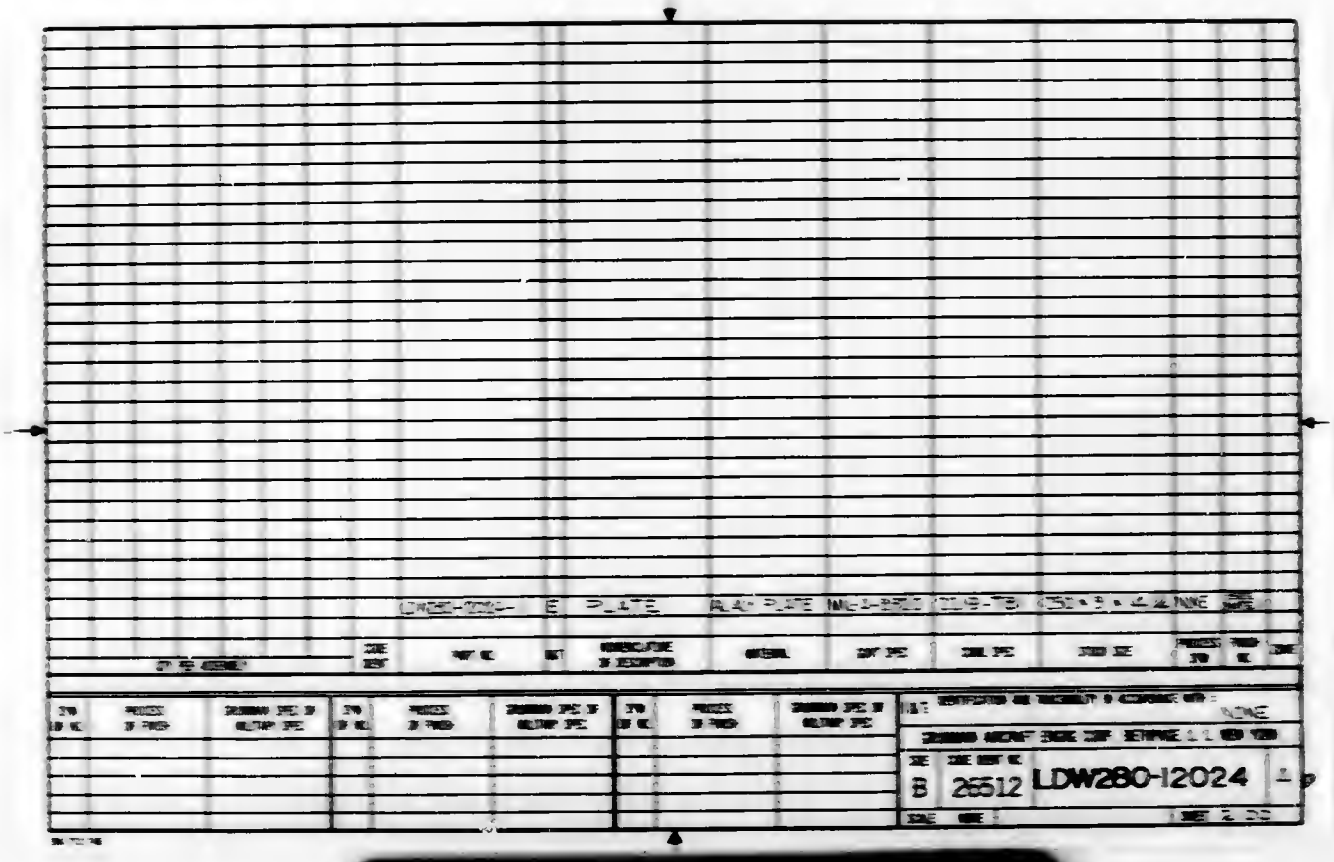
LTR	GROUP LDR	WEAPONS INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO		
B	26512	LDW280-12024	A

SCALE NONE SHEET 1 OF 1

01 NAS 9-1100



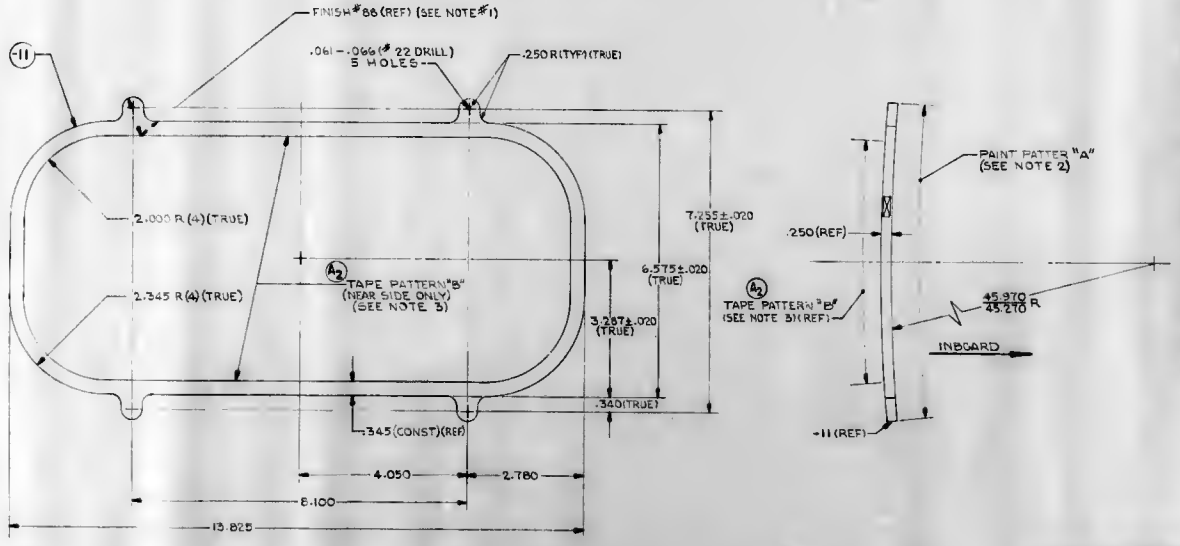
01
MRS 9-1980

NOTES:

1. FINISH TO BE #88 (ANODIZE) PER LSP14-9030 EXCEPT THAT TOTAL ANODIZE TIME IS TO BE 80 MINUTES. AFTER ANODIZING, PAINT PATTERN "A" IS TO BE APPLIED (INB'D SIDE, REF) PER NOTE 2 TO THE AREA DESIGNATED IN FIELD OF DRAWING. TAPE PATTERN "B" (OUTB'D SIDE, REF) IS TO BE APPLIED PER NOTE 3 TO THE AREA DESIGNATED IN FIELD OF DRAWING.

2. PAINT PATTERN "A" TO BE APPLIED TO OBTAIN A TOTAL HEMISPHERICAL EMITTANCE (ϵ_{th}) VALUE OF ϵ_{th} = .70±.03 ADJUST EMITTANCE PER LPC280-45 USING PAINT IN LIEU OF TAPE. PAINT WITH 401 B2 GRAY (LSM14-4405) PER LSP14-4503.

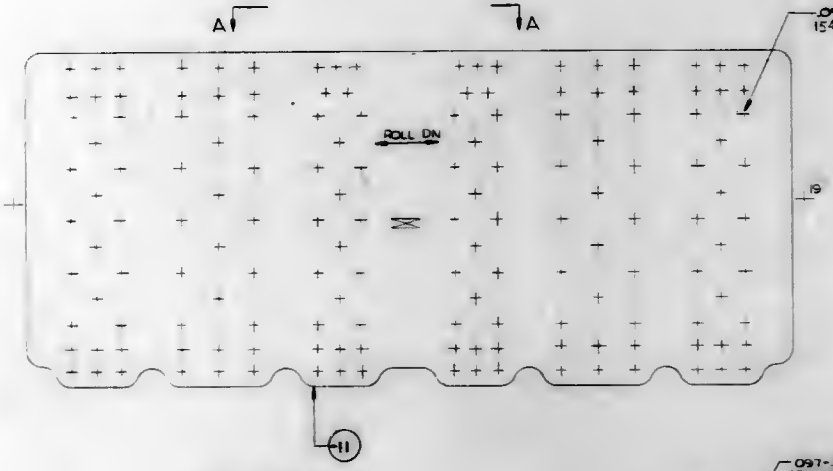
3. TAPE PATTERN B TO BE APPLIED TO OBTAIN A TOTAL EMITTANCE (ϵ_{th}) VALUE OF ϵ_{th} = .25±.02 ADJUST EMITTANCE PER LPC280-45.

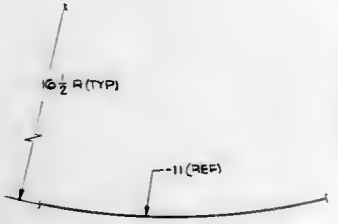


D	26512	LDW280-12024	A
FWT			SHT 3 OF 6

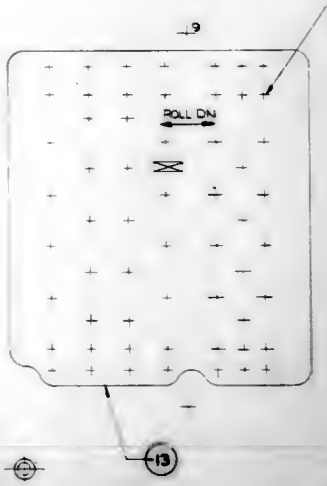
NOTE :

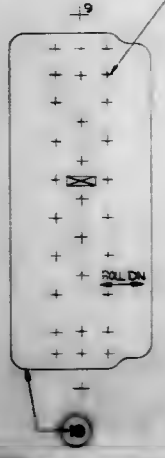
1. NO TOOLING HOLES PERMITTED IN PARTS





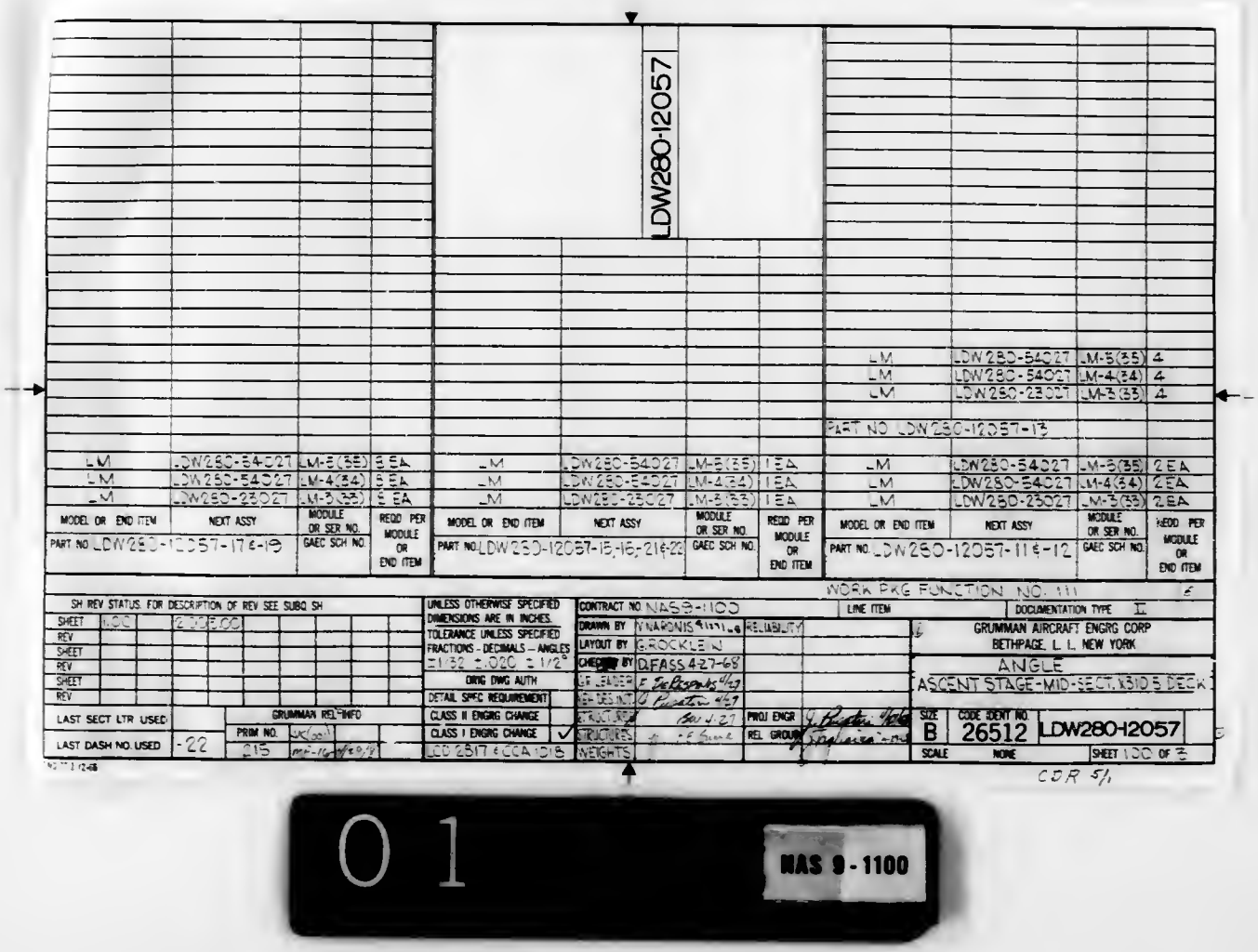
VIEW A-A (TYP FOR -11,-13,-15,-17 & -19)
(SCALE: NONE)



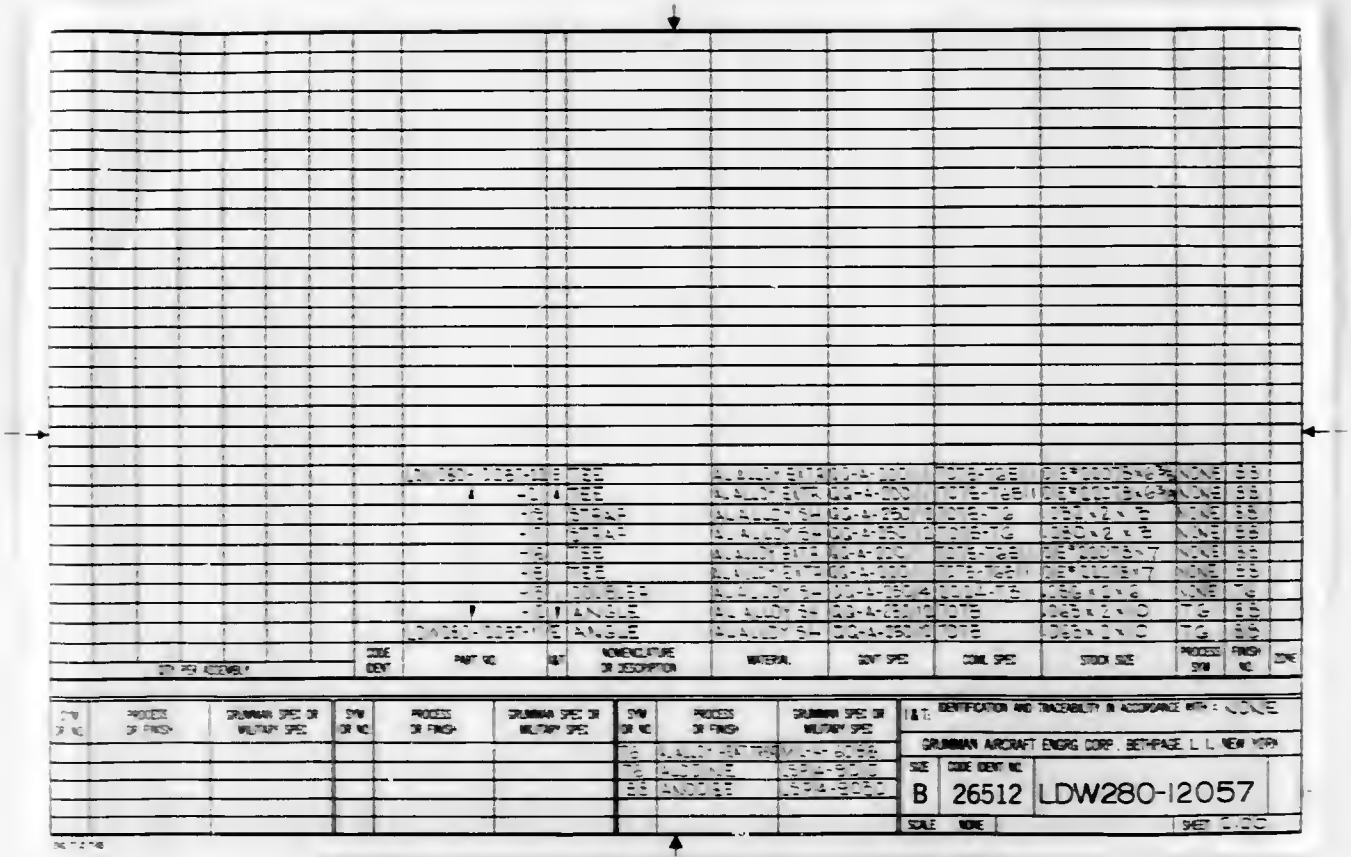


E	28512	LDW280-12056

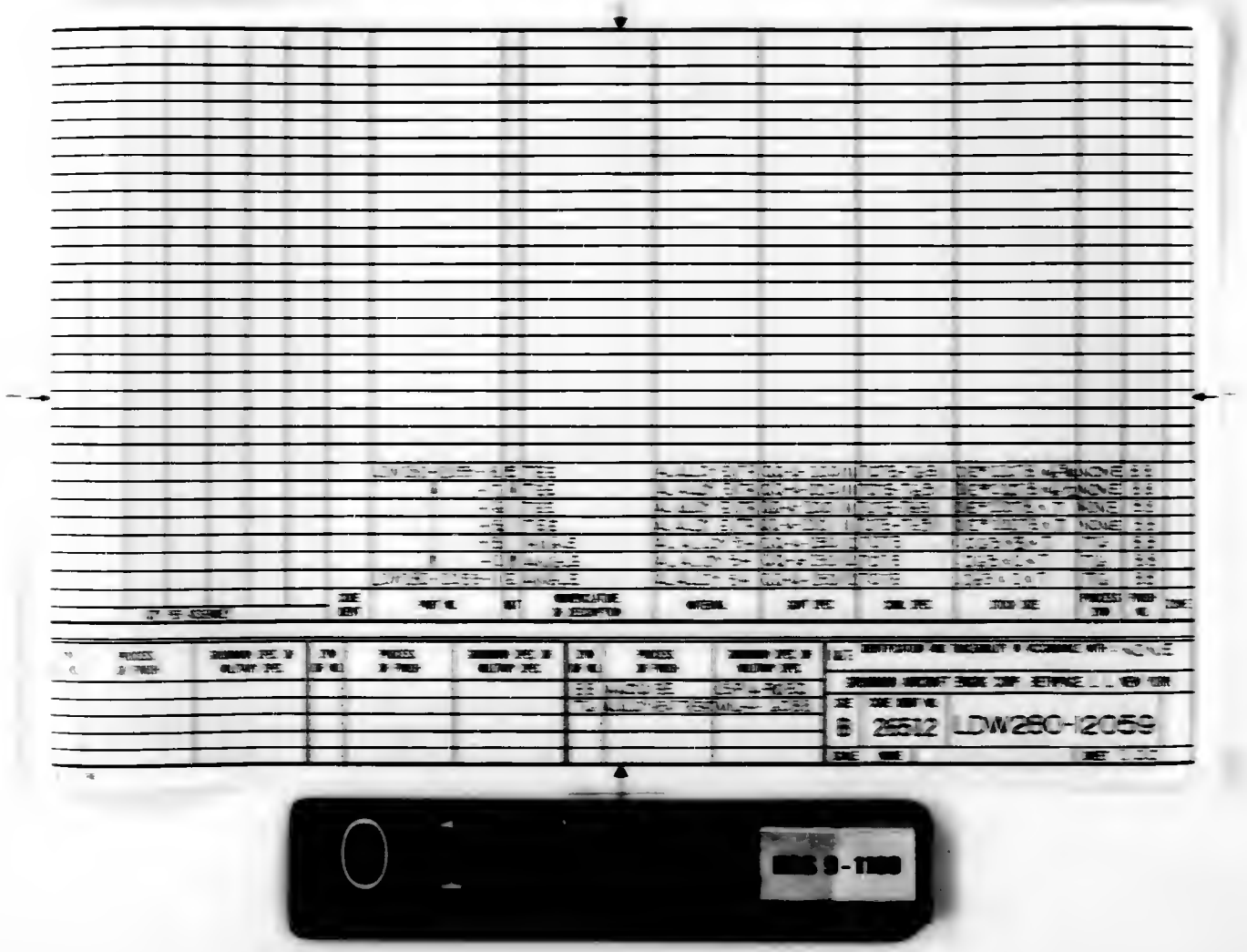
FOR PHOTO REPRODUCTION

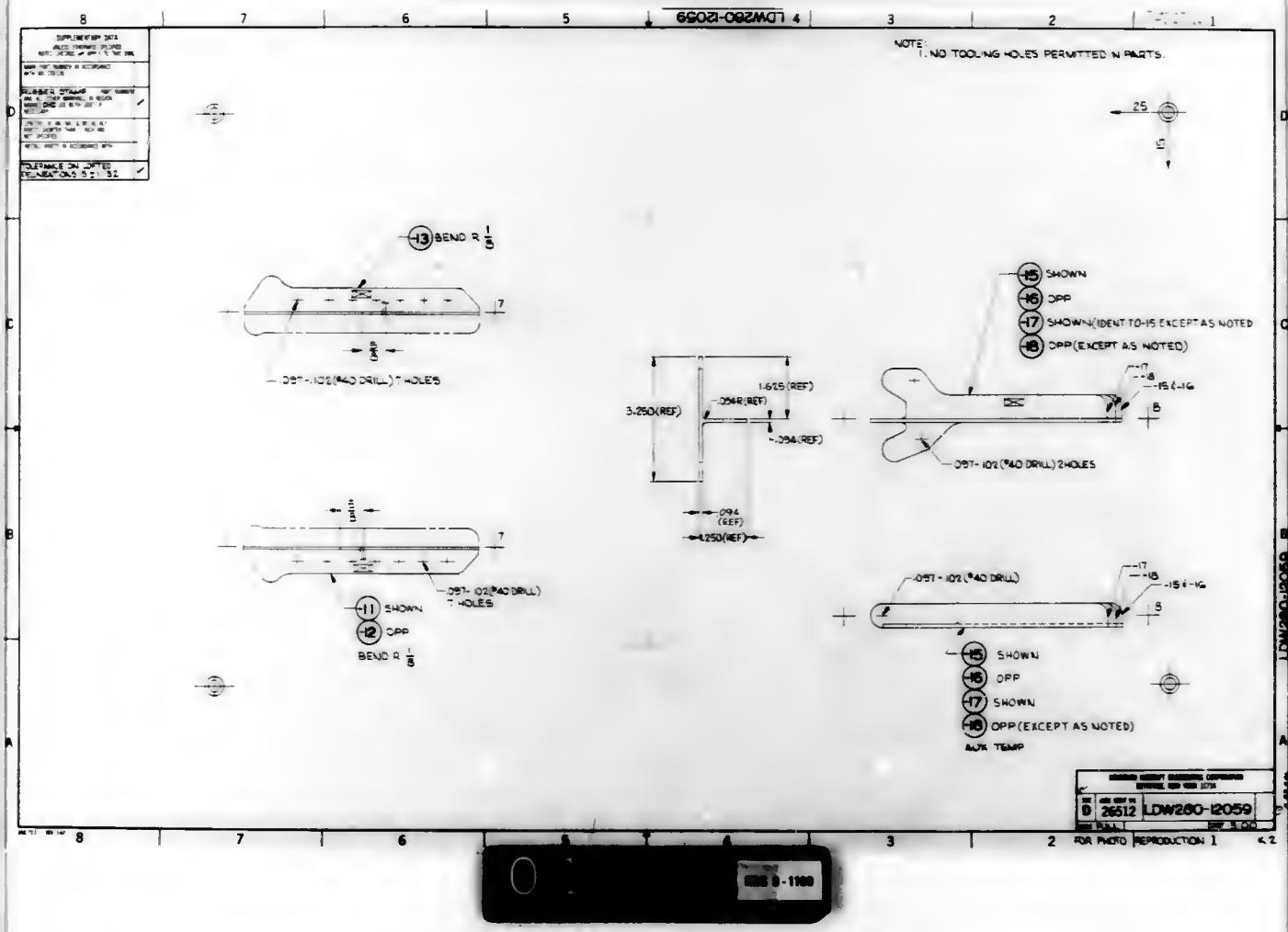

LDW280-12057
LM LDW280-54027 LM-5(35) 4
LM LDW280-54027 LM-4(34) 4
LM LDW280-23027 LM-3(33) 4
PART NO LDW280-12057-13
LM LDW280-54027 LM-5(35) 1 EA
LM LDW280-54027 LM-4(34) 1 EA
LM LDW280-23027 LM-3(33) 1 EA
PART NO LDW280-12057-15,16,21&22
LM LDW280-54027 LM-5(35) 2 EA
LM LDW280-54027 LM-4(34) 2 EA
LM LDW280-23027 LM-3(33) 2 EA
PART NO LDW280-12057-11&12
MODEL OR END ITEM
NEXT ASSY
MODULE OR SER NO.
GAEC SCH NO.
REQD PER MODULE OR END ITEM
PART NO LDW280-12057-17&19
WORK PKG FUNCTION NO. 111
SH REV STATUS FOR DESCRIPTION OF REV SEE SUBQ SH
SHEET 1-20 21-30
REV C D
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES ±1/32 ±.020 ±1/2°
CONTRACT NO NAS9-1100
LINE ITEM
DOCUMENTATION TYPE II
DRAWN BY V NARONIS
LAYOUT BY G ROCKLEN
CHECKED BY D FASS 4-27-68
RELIABILITY
GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
ANGLE
ASCENT STAGE-MID-SECT, X310 5 DECK
DRG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE
LCD 2817 & CCA 1018
PROJ ENGR
REL GROUP
STRUCTURES
WEIGHTS
SIZE B
CODE IDENT NO. 26512
LDW280-12057
SCALE NONE
SHEET 100 OF 3
LAST SECT LTR USED
LAST DASH NO. USED -22
GRUMMAN REL-INFO
PRIM NO. 215
CDR 5/1

01
NAS 9-1100



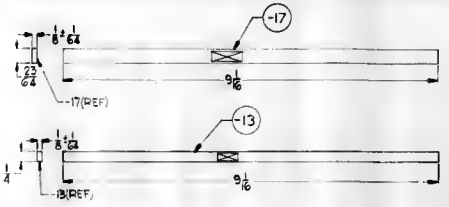
QTY PER ASSEMBLY	CODE IDENT	PART NO.	REV	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SPEC	FINISH NO.	ZONE


B
26512
LDW280-12059


LDW280-12059
NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.
SUPPLEMENTARY DATA
TOLERANCE ON DIMENSIONS ± .1 ± .32
-13 BEND R 1/8
.097-.102 (#40 DRILL) 7 HOLES
-11 SHOWN
-12 OPP
BEND R 1/8
3.250 (REF)
1.625 (REF)
.094 (REF)
.094 (REF)
.094 (REF)
4.250 (REF)
-15 SHOWN
-16 OPP
-17 SHOWN (IDENT TO -15 EXCEPT AS NOTED
-18 OPP (EXCEPT AS NOTED)
.097-.102 (#40 DRILL) 2 HOLES
.097-.102 (#40 DRILL)
-15 SHOWN
-16 OPP
-17 SHOWN
-18 OPP (EXCEPT AS NOTED)
AUX TEMP
D 26512 LDW280-12059
FOR PHOTO REPRODUCTION 1 OF 2
LDW280-12059 B

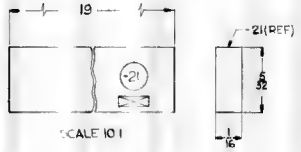
SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED (✓) APPLY TO ANO 3ND

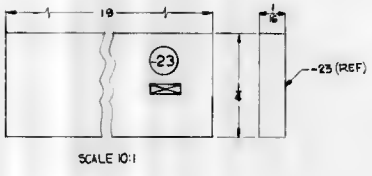
SEE PART NUMBER IN ACCORDANCE WITH MIL STD 130	
FABRICATE PER THIS PART NUMBER AND ALL OTHER DRAWINGS OR SECOND NUMBERS USED WITH THIS # AS CALLED	✓
LENGTHS OF ALL HOLES & SLOTS ALL RADII SMALLER THAN 1 INCH ARE NOT SPECIFIED	
MATERIAL ASSETS IN ACCORDANCE WITH	

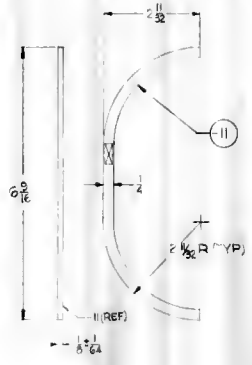


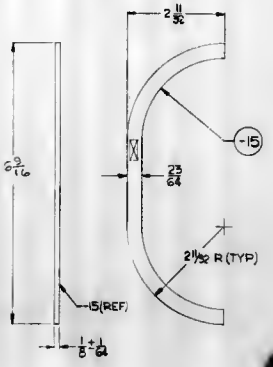
NOTES

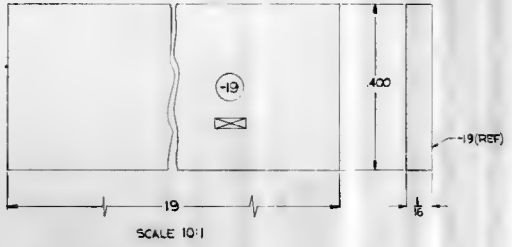
1. MAKE -11-13-15-17-19-21-23 FROM SILICONE RUBBER SHEET SILASTIC-S-6528-4-300 COLOR WHITE HARDNESS SHORE A 50±5 DUROMETER PER LSM14-4058. FINISH & PROCESS NONE. SLIGHT CONCAVITY OF EDGES IS PERMISSIBLE. IT MAY BE PURCHASED FROM DOW CORNING CORP. CODE IDENT. NO 71984.
2. THIS DWG IS AFFECTED BY LFM165 WHICH MAY BE USED ON LM-3(39), LM-4(34) AND LM-5(35)











[redacted]

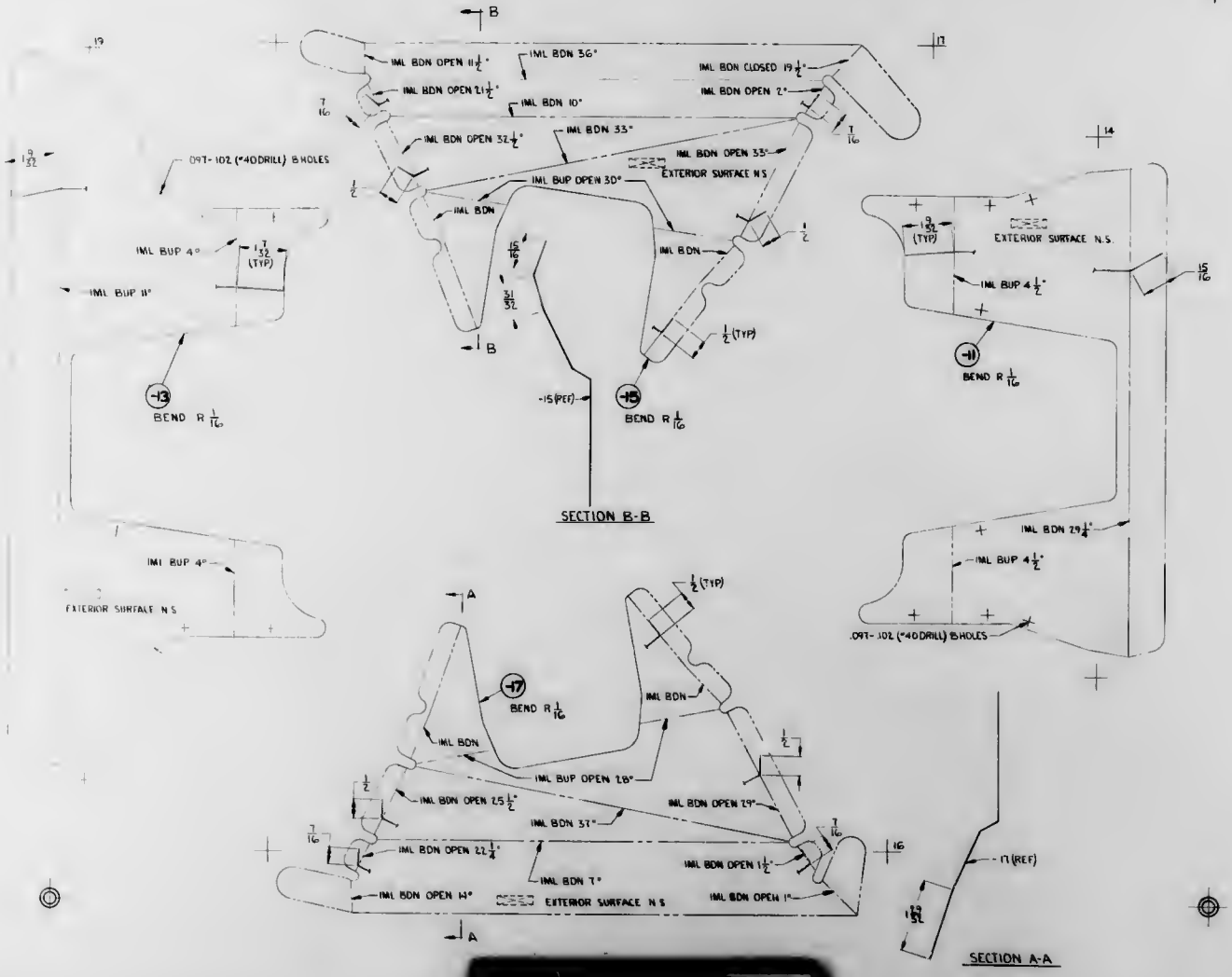
SIZE	FSCM NO.	DWG NO.
D	28512	LDW280-12076

SHEET

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED (✓) APPLY TO THIS DWG.

MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130	
NUMBER, STAMP, PART NUMBER AND ALL OTHER MARKINGS AS SPECIFIED ON DRAWING (EXCEPT WHERE MARK UNDER P REQUIRED)	✓
LENGTHS OF ANY RIVS & NPT BL RLY WHICH UNDERTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL RIVETS IN ACCORDANCE WITH	
TOLERANCE ON LOFTED DELINEATION IS ± 1/64	✓

NOTES
1. NO TOOLING HOLES PERMITTED IN PARTS
2. MATL TO BE PRE-FINISHED PER LEI 280-015 SURFACE DESIGNATED "EXTERIOR" TO BE PROTECTED WITH STRIPPABLE VINYL COATING #196 PURCHASED FROM CARROL PRODUCTS INC., FARMINGDALE, N.Y.



E	26512	LDW280-12H

FOR PHOTO REPRODUCTION

LDW280-12118

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
BOXES CHECKED ✓ APPLY TO THIS DWG.

BRAND PART NUMBER IN ACCORDANCE WITH MPL STD 730	
FILM/PAINT STAMP PART NUMBER AND ALL OTHER MARKINGS AS REQUIRED SHALL BE PLACED ON BOTH SIDES IF NECESSARY	✓
ETCHING OF ON THIS & ON ALL ASSY SHEETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
ENROLL SHEETS IN ACCORDANCE WITH	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

NOTE
1. NO TOOLING HOLES PERMITTED IN PARTS
2. PAINT WITH LSM 14-4201, TYPE I (ALUMINUM PIGMENTED SILICONE SA 245) APPLY PER LSP 14-4506.

25
15

.097-.102 (DRILL #40) (4) HOLES
5/16
IML BUP OPEN 27 1/4°
IML BUP CL 27 1/4°
11/16
9
-11 (SHOWN)
-12 (OPP)
BEND R 3/32

.097-.102 (DRILL #40) 3 HOLES
3/8
IML BUP CL 15 1/2°
IML BUP OPEN 15 1/2°
3/8
8
-17 (SHOWN)
-18 (OPP)
BEND R 3/32

11/16
IML BUP OPEN 10°
IML BUP CL 10°
5/16
10
-13 (SHOWN)
-14 (OPP)
BEND R 3/32
.097-.102 (DRILL #40) (4) HOLES

3/8
IML BUP CL 29 1/2°
IML BUP OPEN 29 1/2°
19/32
11
.097-.102 (DRILL #40) 4 HOLES
-15 (SHOWN)
-16 (OPP)
BEND R 3/32

0 1

SIZE D	DWG NO 26512	LDW280-12118
SCALE FULL		SHT 3 OF 3

8 7 6 5 4 3 2 1

2 FOR PHOTO REPRODUCTION 1

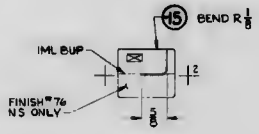
LDW280-12119

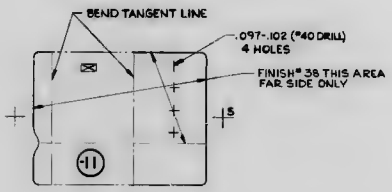
SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

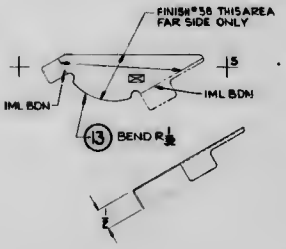
MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130	
RUBBER STAMP — PART NUMBER AND ALL OTHER MARKINGS IN RETAIN MARK REQUIRED FOR COMMERCIAL	✓
LENGTHS OF ALL MAG & MC AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL RIVETS IN ACCORDANCE WITH	
TOLERANCE ON LOFTED DELINEATIONS, ±0.2	✓

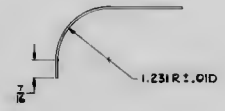
25
15

NOTES
1 NO TOOLING HOLES PERMITTED IN PARTS
2 -11 & -13 FINISH# 38 IN AREA INDICATED
3 -15 FINISH# 76 IN AREA INDICATED









01

SIZE	FSCM NO.	DWG NO.	REV
D	26512	LDW280-12119	

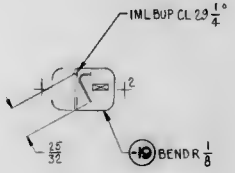
SCALE FULL SHEET 3 OF 3

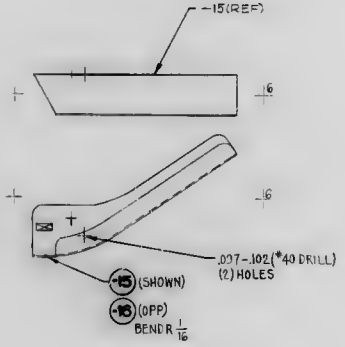
FOR PHOTO REPRODUCTION

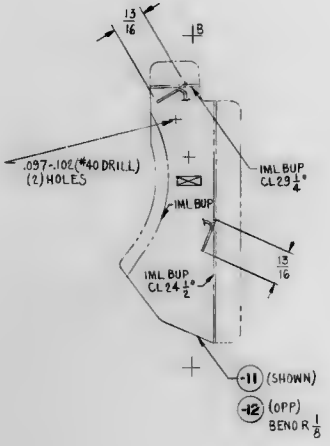
SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG

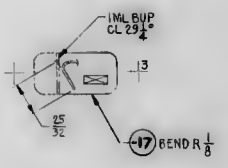
MARK PART NUMBER IN ACCORDANCE WITH MIL STD 130	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY	✓
LENGTHS OF MS, NAS & MS AL ALT RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL RIVETS IN ACCORDANCE WITH	
TOLERANCE FOR UNSPECIFIED DIMENSIONS IS ± .032	✓

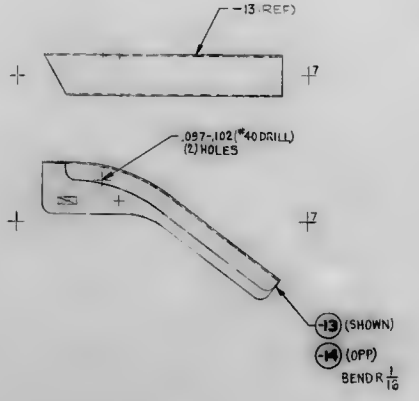
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS







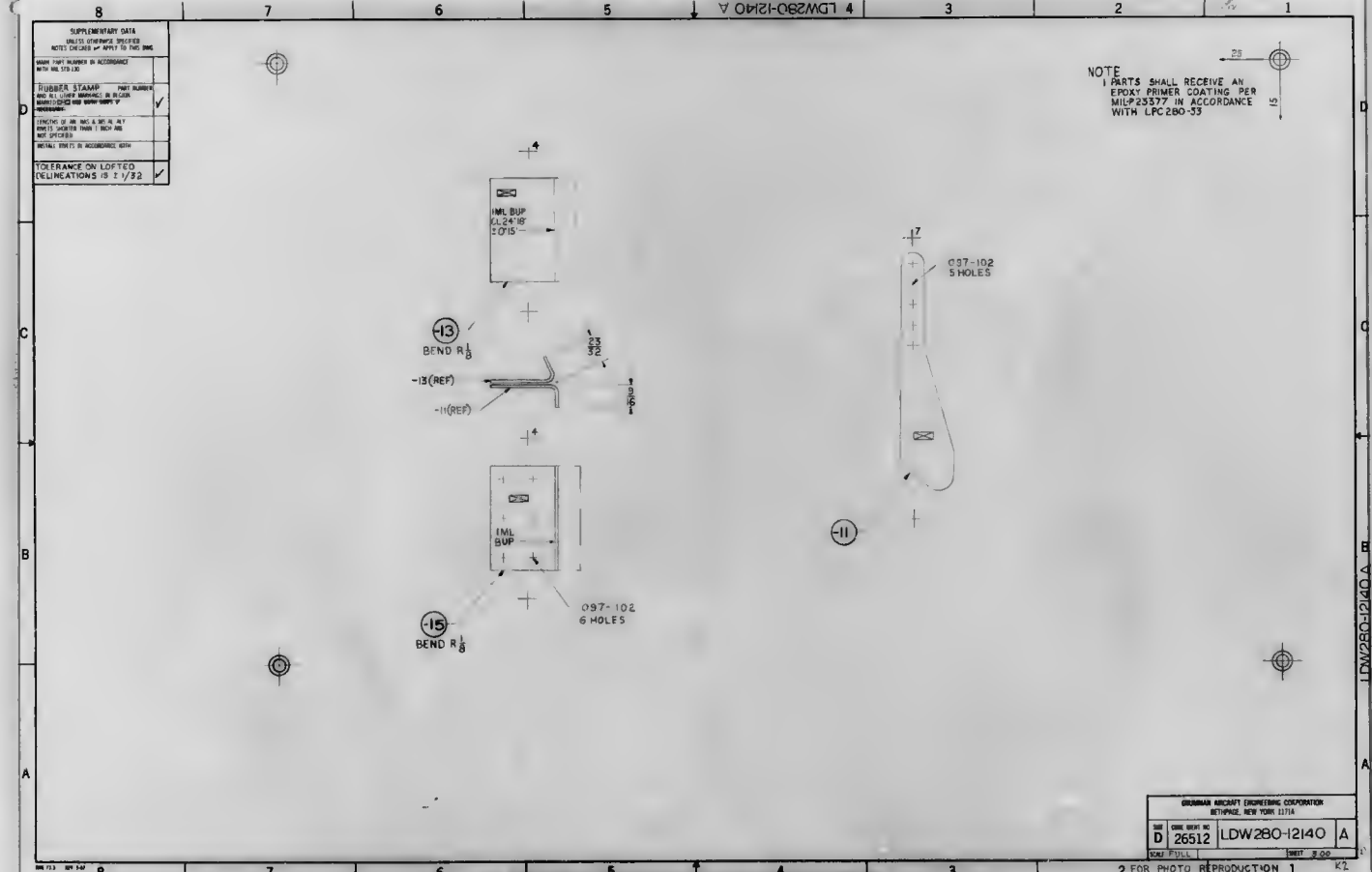




01

SIZE E	CAGE SHEET NO. 26512	LDW280-12121
SCALE FULL	SHEET 3 20	

FOR PHOTO REPRODUCTION


SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG
MARK PART NUMBER IN ACCORDANCE WITH MIL STD-130
RUBBER STAMP PART NUMBER
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32
NOTE
1 PARTS SHALL RECEIVE AN EPOXY PRIMER COATING PER MIL-P23377 IN ACCORDANCE WITH LPC 280-33
IML BUP
STA 24.18
LO 15
-13
BEND R 1/8
-13 (REF)
-11 (REF)
IML BUP
-15
BEND R 1/8
097-102
6 HOLES
097-102
5 HOLES
-11
GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714
SIZE D
CAGE IDENT NO 26512
LDW280-12140
A
SCALE FULL
SHEET 2 OF 2
2 FOR PHOTO REPRODUCTION 1

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	QUAL APPD
A	1	1.00, 1.10 2.00, 3.00		M LFM435		✓		EOA1 LCD3982	EOA1 ~ INITIAL DWG RELEASE PARTS MADE PER EO	LM-7, LM-8 & LM-9	NOT -	REQ'D	STONHAM 5-29-69		
	2	1.00 2.00 3.00		LFM435 M Ⓡ		✓		LCD3982	REF EOA1: CREATED -11 & -13 SHOULD BE CREATED -11, -13 & -1 MATCHED SET. 1/8 (TYP) WAS 1/8 N. Yaro						

CHG APPROVED

LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS
A	FOR/N 6/3/69	J. Schilling		mjd 6/5/69	

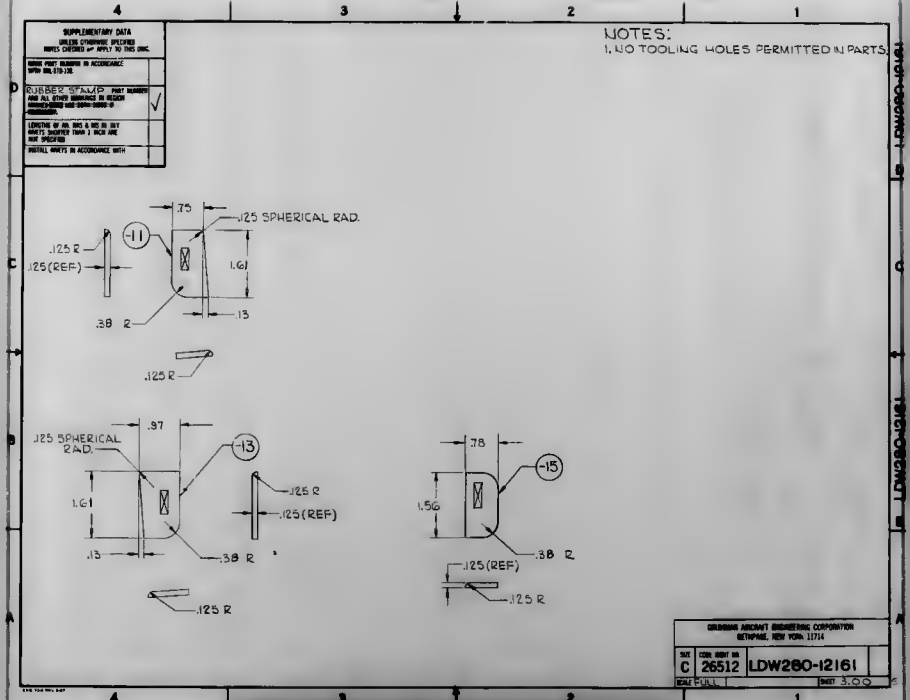
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-12157	A

SCALE NONE SHEET 1 10

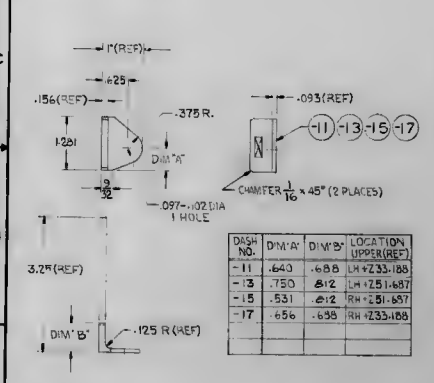
01

NAS 9-1100

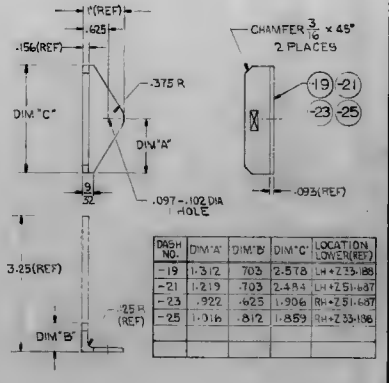

SUPPLEMENTARY DATA
RUBBER STAMP
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
.75
.125 SPHERICAL RAD.
-11
.125 R
.125(REF)
1.61
.38 R
.13
.125 R
.97
.125 SPHERICAL RAD.
-13
1.61
.13
.38 R
.125 R
.125(REF)
.125 R
.78
-15
1.50
.38 R
.125(REF)
.125 R
GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714
SIZE C
CODE IDENT NO 26512
LDW280-12161
SCALE FULL
SHEET 3 OF 3
LDW280-12161

NAS 8-1100

SUPPLEMENTARY DATA UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
ENTER PART NUMBER IN ACCORDANCE WITH GAC-STD-135	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS AS NOTED	√
LENGTHS OF MS DWG & MS A. ALT ASPECTS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL SHEETS IN ACCORDANCE WITH	



DASH NO.	DIM "A"	DIM "B"	LOCATION UPPER(REF)
-11	.640	.688	LH +Z33.188
-13	.750	.812	LH +Z51.687
-15	.531	.812	RH +Z51.687
-17	.656	.688	RH +Z33.188



DASH NO.	DIM "A"	DIM "B"	DIM "C"	LOCATION LOWER(REF)
-19	1.312	.703	2.578	LH +Z33.188
-21	1.219	.703	2.484	LH +Z51.687
-23	.922	.625	1.906	RH +Z51.687
-25	1.016	.812	1.859	RH +Z33.188

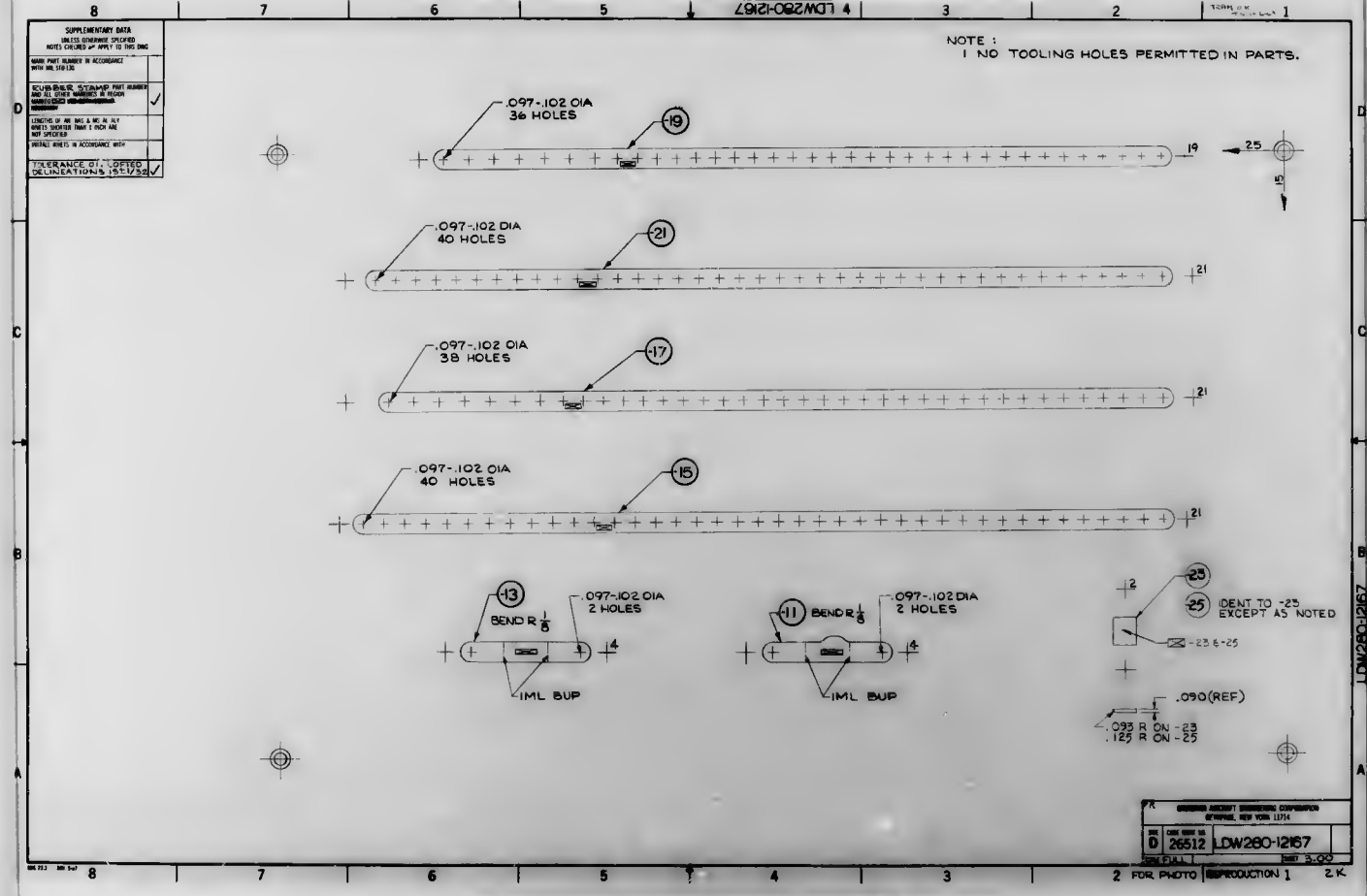
GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE	CODE IDENT NO.	DWG NO.
C	26512	LDW280-12166

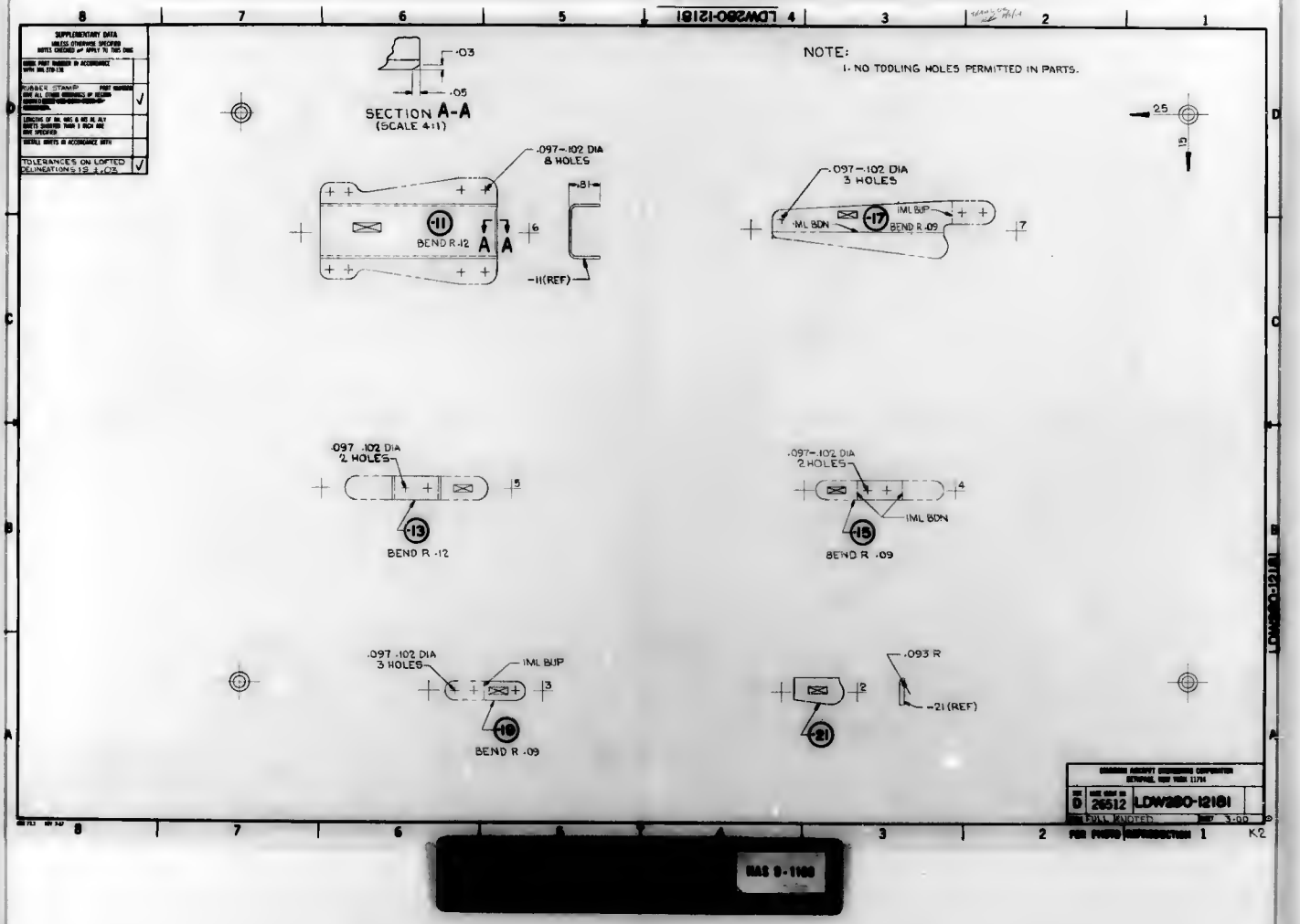
SCALE FULL SHEET 3 OF 9

LDW280-12166

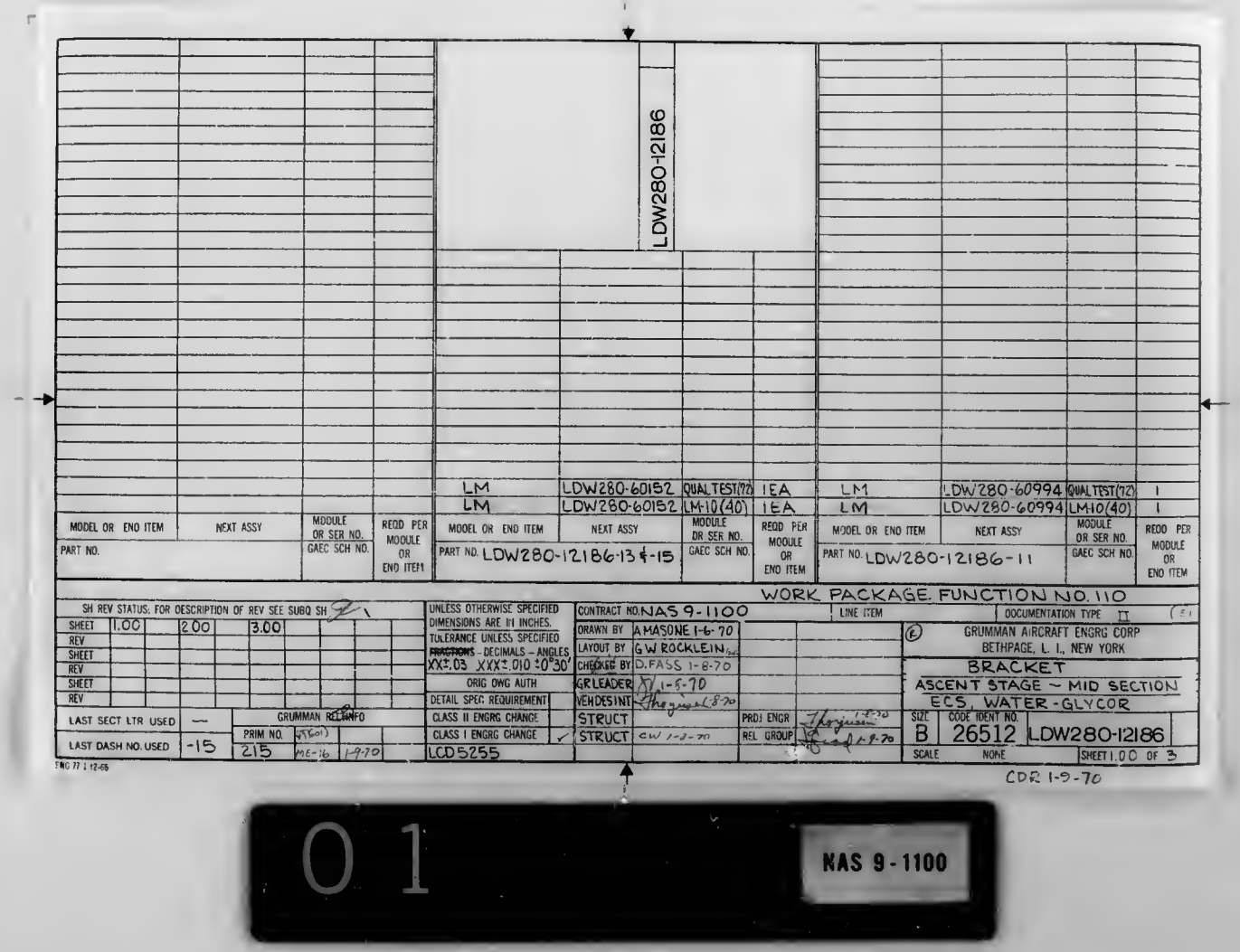
RAS D-1100


LDW280-12167
SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG
MARK PART NUMBER IN ACCORDANCE WITH MS 51013C
SCRIBE STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION
LENGTHS OF ARC DIMS & MC IN ALY MINUTE SHORTER THAN 1 INCH ARE NOT SPECIFIED
INSTALL RIVETS IN ACCORDANCE WITH
TOLERANCE OF LOFTED DELINEATIONS IS ±1/32
NOTE :
1 NO TOOLING HOLES PERMITTED IN PARTS.
.097-.102 DIA
36 HOLES
-19
.097-.102 DIA
40 HOLES
-21
.097-.102 DIA
38 HOLES
-17
.097-.102 DIA
40 HOLES
-15
-13
BEND R 1/8
.097-.102 DIA
2 HOLES
IML BUP
-11
BEND R 1/8
.097-.102 DIA
2 HOLES
IML BUP
-23
-25
IDENT TO -23 EXCEPT AS NOTED
-23 & -25
.090(REF)
.093 R ON -23
.125 R ON -25
D 26512 LDW280-12167
SHEET 3.00
FOR PHOTOREPRODUCTION
LDW280-12167

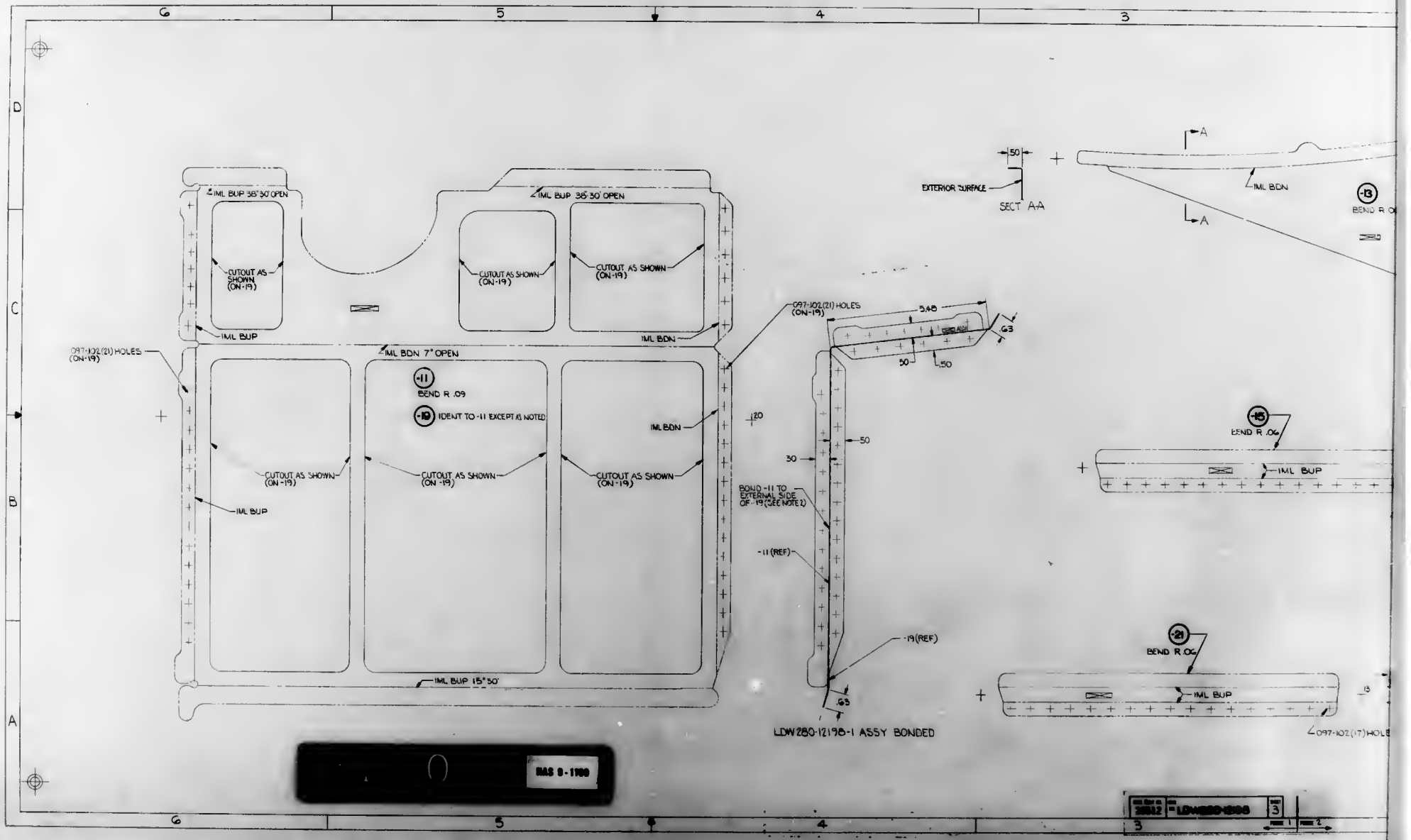
01 NAS 9-1100

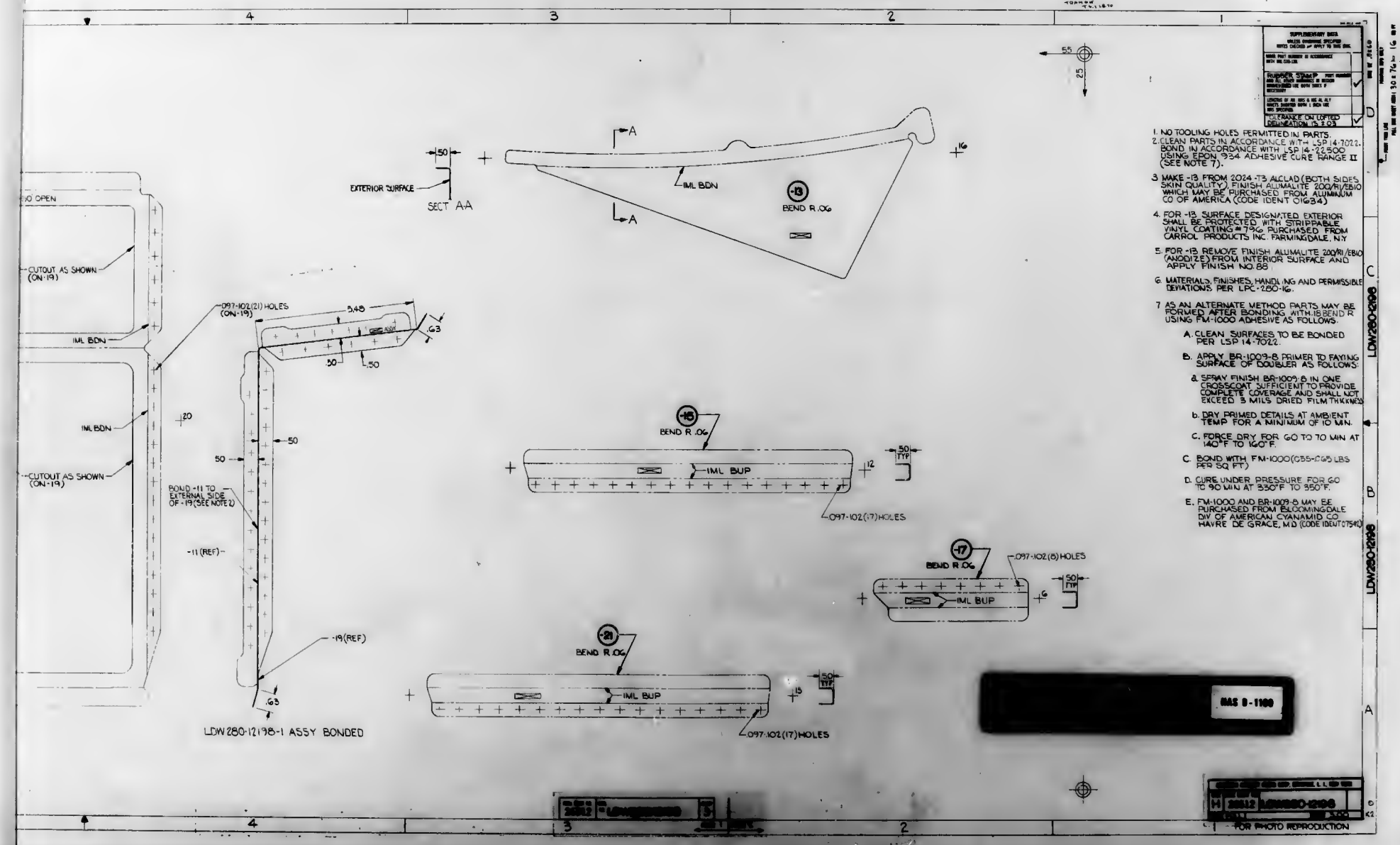

LDW280-12181
SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
RUBBER STAMP
TOLERANCES ON LOFTED DELINEATIONS ±.13 ±.02
.03
.05
SECTION A-A
(SCALE 4:1)
NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.
.097-.102 DIA
8 HOLES
-11
BEND R .12
.81
-11(REF)
.097-.102 DIA
3 HOLES
-17
IML BDN
IML BUP
BEND R .09
.25
.13
.097-.102 DIA
2 HOLES
-13
BEND R .12
.097-.102 DIA
2 HOLES
IML BDN
-15
BEND R .09
.097-.102 DIA
3 HOLES
IML BUP
-19
BEND R .09
.093 R
-21(REF)
-21
D
26512
LDW280-12181
SCALE NONE
SHEET 3 OF 3
FOR PHOTO REPRODUCTION
K-2

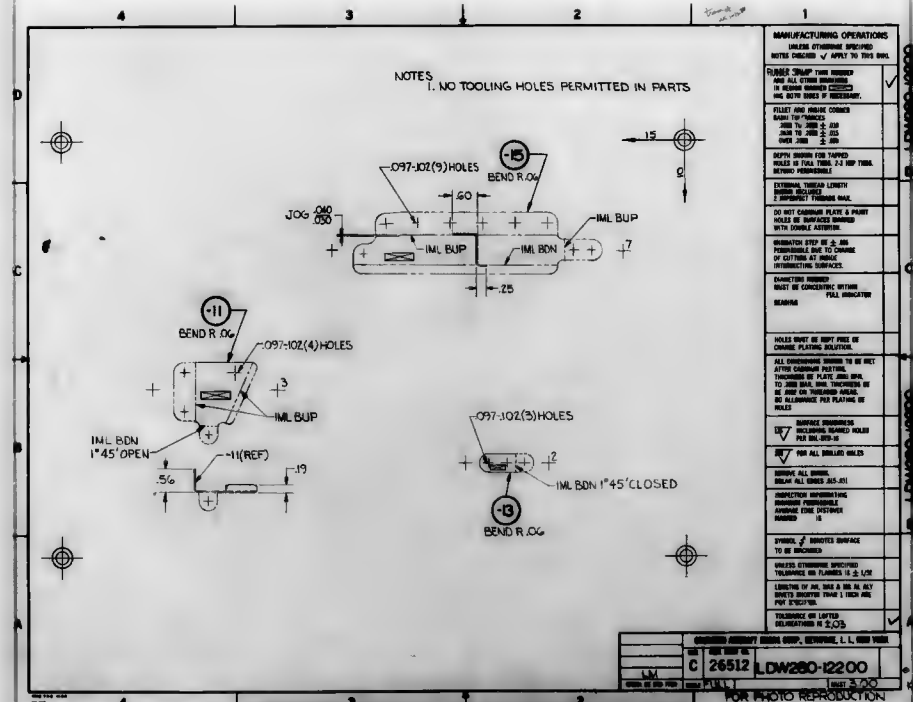
NAS 9-1100


LDW280-12186
LM LDW280-60152 QUAL TEST(72) 1 EA
LM LDW280-60152 LM-10(40) 1 EA
MODEL OR END ITEM NEXT ASSY MODULE OR SER NO. GAEC SCH NO. REQD PER MODULE OR END ITEM
PART NO. LDW280-12186-13 & -15
LM LDW280-60994 QUAL TEST(72) 1
LM LDW280-60994 LM-10(40) 1
MODEL OR END ITEM NEXT ASSY MODULE OR SER NO. GAEC SCH NO. REQD PER MODULE OR END ITEM
PART NO. LDW280-12186-11
WORK PACKAGE FUNCTION NO. 110
SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH 1
SHEET 1.00 2.00 3.00
REV
SHEET
REV
SHEET
REV
LAST SECT LTR USED —
LAST DASH NO. USED -15
GRUMMAN REL INFO
PRIM NO. 215 ME-16 1-9-70
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
XX±.03 XXX±.010 ±0°30'
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD 5255
CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II (E)
DRAWN BY A MASONE 1-6-70
LAYOUT BY G W ROCKLEIN
CHECKED BY D. FASS 1-8-70
GR LEADER 1-8-70
VEH DES INT
STRUCT
STRUCT CW 1-9-70
PROJ ENGR
REL GROUP
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK
BRACKET
ASCENT STAGE ~ MID SECTION
ECS, WATER-GLYCOR
SIZE B
CODE IDENT NO. 26512
LDW280-12186
SCALE NONE
SHEET 1.00 OF 3
ENG 77 1 12-65
CDR 1-9-70

01
NAS 9-1100

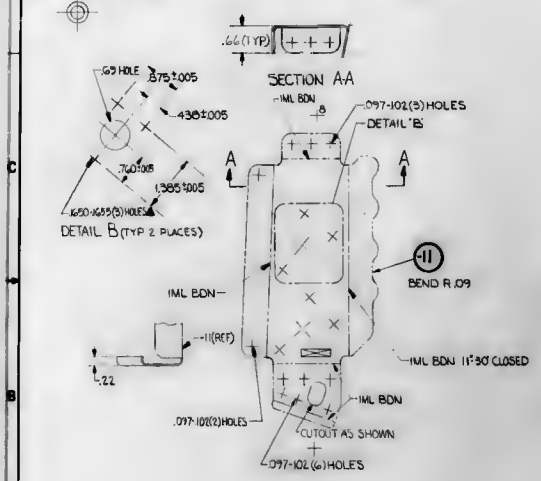

IML BUP 38°30' OPEN
IML BUP 38°30' OPEN
CUTOUT AS SHOWN (ON-19)
CUTOUT AS SHOWN (ON-19)
CUTOUT AS SHOWN (ON-19)
IML BUP
IML BDN
097-102(21) HOLES (ON-19)
IML BDN 7° OPEN
-11 BEND R .09
-13 IDENT TO -11 EXCEPT AS NOTED
IML BDN
CUTOUT AS SHOWN (ON-19)
CUTOUT AS SHOWN (ON-19)
CUTOUT AS SHOWN (ON-19)
IML BUP
IML BUP 15°30'
097-102(21) HOLES (ON-19)
.548
.G3
.50
.50
.20
.50
30
BOND -11 TO EXTERNAL SIDE OF -19 (SEE NOTE 2)
-11 (REF)
-19 (REF)
.G3
LDW280-12198-1 ASSY BONDED
EXTERIOR SURFACE
.50
SECT A-A
A
A
IML BDN
-13 BEND R .0
-15 BEND R .06
IML BUP
-21 BEND R .06
IML BUP
.18
097-102(17) HOLE
BAS 8-1100
6
5
4
3
D
C
B
A

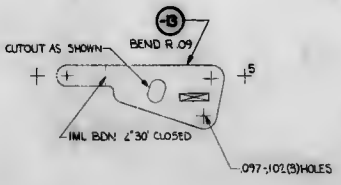

4
3
2
1
D
C
B
A
.50
EXTERIOR SURFACE
SECT A-A
A
A
IML BDN
-13
BEND R.06
.16
.55
.25
.10 OPEN
CUTOUT AS SHOWN (ON-19)
IML BDN
IML BDN
CUTOUT AS SHOWN (ON-19)
.097-102(21) HOLES (ON-19)
.548
.63
.50
.50
.20
.50
.50
BOND -11 TO EXTERNAL SIDE OF -19 (SEE NOTE 2)
-11 (REF)
-19 (REF)
.63
LDW280-12198-1 ASSY BONDED
-15
BEND R.06
IML BUP
.50 TYP
.12
.097-102(17) HOLES
-17
BEND R.06
.097-102(5) HOLES
IML BUP
.50 TYP
.6
-21
BEND R.06
IML BUP
.50 TYP
.15
.097-102(17) HOLES
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. CLEAN PARTS IN ACCORDANCE WITH LSP 14-7022. BOND IN ACCORDANCE WITH LSP 14-22500 USING EPON 934 ADHESIVE CURE RANGE II (SEE NOTE 7).
3. MAKE -13 FROM 2024-T3 ALCLAD (BOTH SIDES SKIN QUALITY) FINISH ALUMALITE 200/RI/EBIO WHICH MAY BE PURCHASED FROM ALUMINUM CO OF AMERICA (CODE IDENT 01634)
4. FOR -13, SURFACE DESIGNATED EXTERIOR SHALL BE PROTECTED WITH STRIPPABLE VINYL COATING #796 PURCHASED FROM CARROL PRODUCTS INC. FARMINGDALE, NY
5. FOR -13 REMOVE FINISH ALUMALITE 200/RI/EBIO (ANODIZE) FROM INTERIOR SURFACE AND APPLY FINISH NO. 88
6. MATERIALS, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16.
7. AS AN ALTERNATE METHOD PARTS MAY BE FORMED AFTER BONDING WITH IB BEND R USING FM-1000 ADHESIVE AS FOLLOWS
A. CLEAN SURFACES TO BE BONDED PER LSP 14-7022.
B. APPLY BR-1009-8 PRIMER TO FAYING SURFACE OF DOUBLER AS FOLLOWS:
a. SPRAY FINISH BR-1009-8 IN ONE CROSSCOAT SUFFICIENT TO PROVIDE COMPLETE COVERAGE AND SHALL NOT EXCEED 3 MILS DRIED FILM THICKNESS
b. DRY PRIMED DETAILS AT AMBIENT TEMP FOR A MINIMUM OF 10 MIN.
C. FORCE DRY FOR 60 TO 70 MIN AT 140°F TO 160°F.
C. BOND WITH FM-1000 (.055-.065 LBS PER SQ FT)
D. CURE UNDER PRESSURE FOR 60 TO 90 MIN AT 330°F TO 350°F.
E. FM-1000 AND BR-1009-8 MAY BE PURCHASED FROM BLOOMINGDALE DIV OF AMERICAN CYANAMID CO. HAVRE DE GRACE, MD (CODE IDENT 07540)
SUPPLEMENTARY DATA
TOLERANCE ON LOFTED DIMENSION IS ±.03
MAS 8-1100
LDW280-2198
LDW280-2198
FOR PHOTO REPRODUCTION

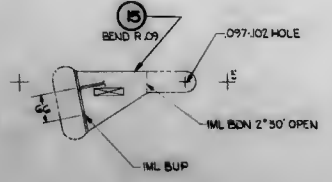

NOTES
1. NO TOOLING HOLES PERMITTED IN PARTS
-15
BEND R.06
.097-.102(9)HOLES
.60
JOG .040 .060
IML BUP
IML BUP
IML BDN
.7
.15
.15
0
-11
BEND R.06
.097-.102(4)HOLES
.3
IML BUP
IML BDN
1°45' OPEN
.56
-11(REF)
.19
.097-.102(3)HOLES
.2
IML BDN 1°45' CLOSED
-13
BEND R.06
MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.
FILLET AND RADIUS CORNER
DEPTH SHOWN FOR TAPPED
EXTERNAL THREAD LENGTH
DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
HOLES MUST BE KEPT FREE OF
ALL DIMENSIONS SHOWN TO BE MET
SURFACE ROUGHNESS
FOR ALL DRILLED HOLES
REMOVE ALL BURRS
INSPECTION REPRESENTATIVE
SYMBOL ∮ DENOTES SURFACE
UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32
TOLERANCE ON LOFTED
C
26512
LDW280-12200
LW
SHEET 2 OF 2
FOR PHOTO REPRODUCTION
NAS 9-1100

SUPPLEMENTARY DATA UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
GREEN PAINT ENAMEL IN ACCORDANCE WITH MIL SPEC 13B	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS AS REQUIRED ON FINISHED SURFACE SIDE WITH SIDE 2 IF NECESSARY	✓
LENGTHS OF MIL DIG & MIL IN ALL NOTES FOLLOWED FROM 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS ± .05	✓

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FOR HOLES MARKED ▲ SEE LDW330M00024 FOR CORRESPONDING HOLE LOCATIONS.
3. CREW HAZARD - PARTS REQUIRE SPECIAL HANDLING TO INSURE REMOVAL OF ALL SHARP EDGES AND BURRS







SIZE	CAGE CODE NO	DRAWING NO	REV
D	26512	LDW280-12202	

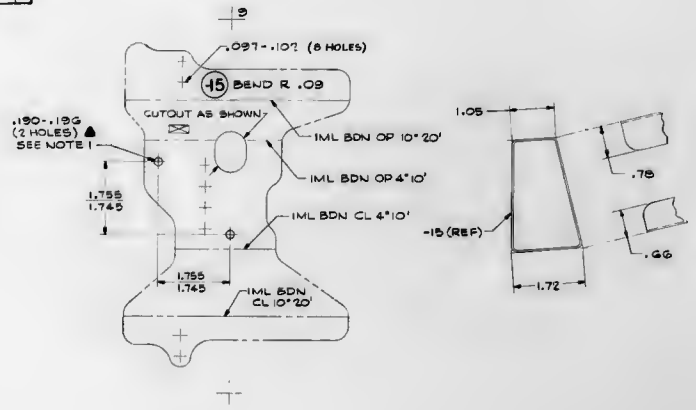
SCALE 3.00 FOR PHOTO REPRODUCTION

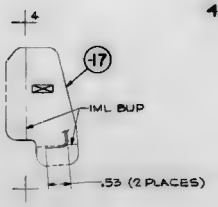
LDW280-12202

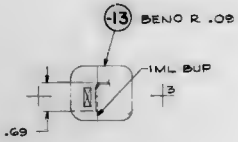
RAS 9-1100

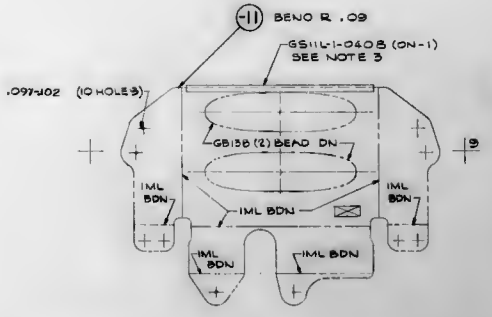
SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG

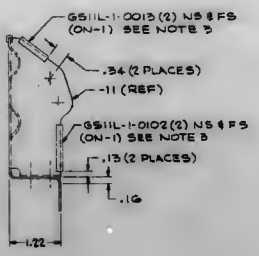
TOLERANCE ON LOFTED DELINEATIONS ± .03	✓
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MACHINED	✓
LENGTHS OF ALL RAD. & RPS. AT ALL RADII UNLESS SHOWN 1 INCH ARE NOT SPECIFIED	✓
PARTS MARKED IN ACCORDANCE WITH LSP-14-15302	✓

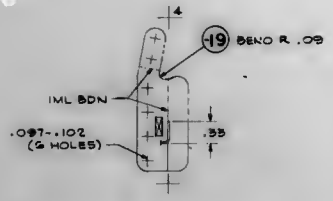


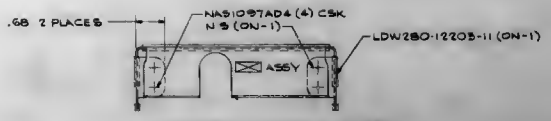












LDW280-12203-1 ASS'Y

NOTES:

1. FOR HOLES MARKED ▲ SEE LSC330-3304 FOR CORRESPONDING HOLE PATTERN.
2. CREW HAZARD, PARTS REQUIRE SPECIAL HANDLING TO INSURE REMOVAL OF ALL SHARP EDGES AND BURRS
3. BOND PER LSP14-22-500 USING EPON 934 CURE RANGE I.
4. NO TOOLING HOLES PERMITTED IN PARTS.

F	26512	LDW280-12203

FOR PHOTO2 REPRODUCTION K2 1

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW 280-12206 | EO NO. A3
CONTROL INFO NO. LM-5-2371

REF EO A2

LDW 280-12206-11-1 S/B -21-1

LDW 280-12206-11 S/B -21

DETAIL SPEC SER | CL II ENGRG CNG | CL I ENGRG CNG | ☒ LCD 5585 PKG #11

REASON FOR EO: PREVIOUS EO REPLACED -11 WITH -21 (REF RTE 05-131-1154)

DESCRIPTION OF EO: REF EO A2 -21-1 WAS -11-1 -21 WAS -11

MODEL	EFFECTIVITY: PRINCIPAL ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO.
LM		LM-10(40)	THRU
		LM-13(43)	

DRAWING OPTIONS NEED: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY: PPP 8-13-70 VDI | SUPPORT | RELEASE GROUP

DATE: 8-13-70

GROUP LEADER	STRESS GROUP	LOFTSMEN ENGRG	TOOL ENGRG	MFG
JW 8/24/70	KC 9/4/70	CH 8/27/70	PEF 9-22-70	

PRIORITY: C

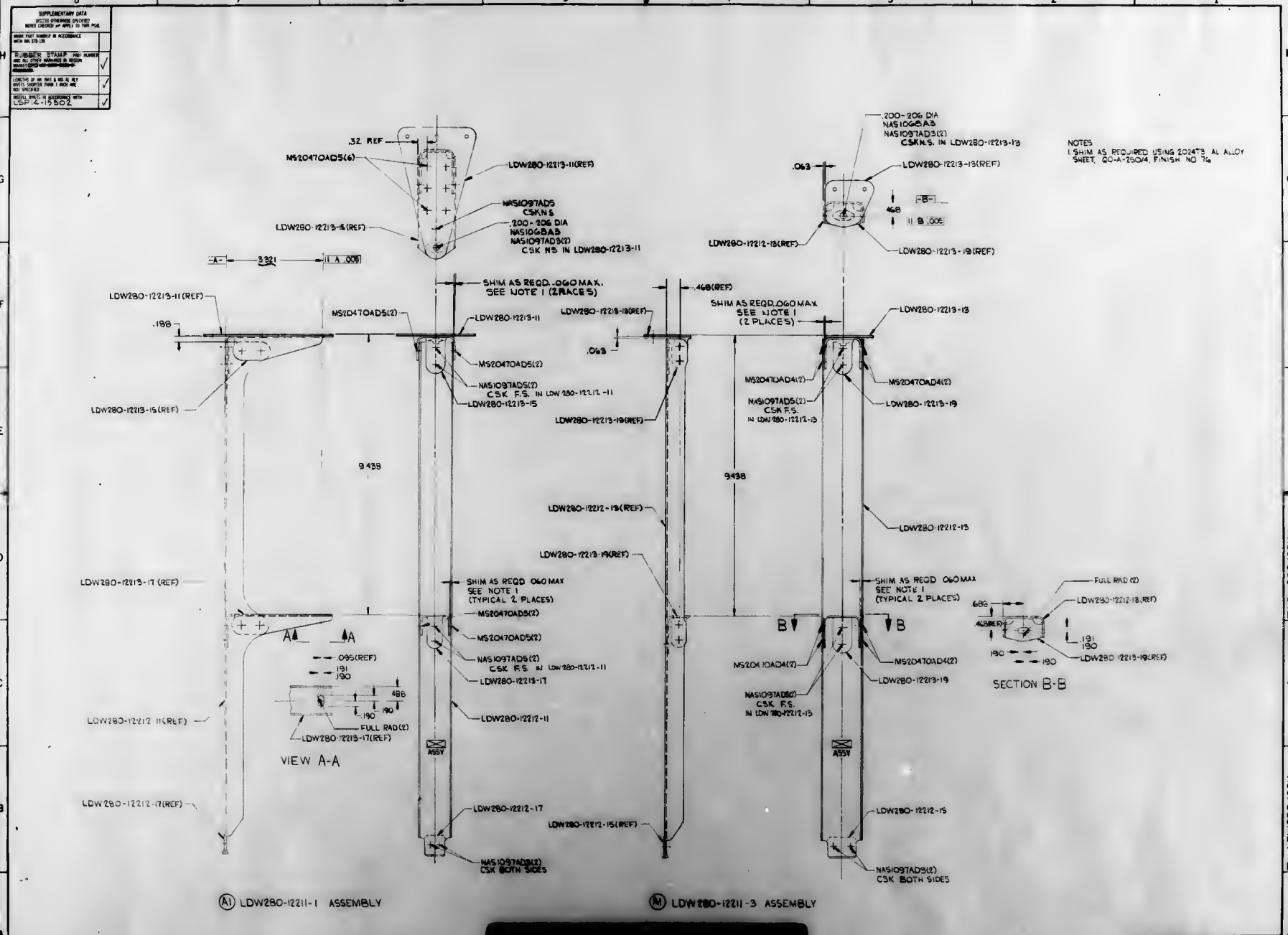
DRAWING TITLE: ANGLE ~ A/S FACE, L.H. SHIELD CABIN FRONT LOWER THERMAL

DRAWING NO. LDW280-12206 SIZE NO. A3

ISSUED BY: LIAISON R. SCRANTON/P. HUSTED X86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

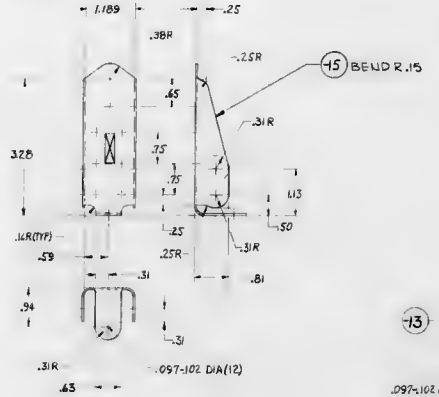

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION
INSTALL RIVETS IN ACCORDANCE WITH LSP12-15502
.32 REF
MS20470AD5(6)
LDW280-12213-11(REF)
NAS1097AD5 CSK N.S
LDW280-12213-15(REF)
.200-.206 DIA NAS1068A3 NAS1097AD3(2) CSK NS IN LDW280-12213-11
-A-
3.321
.11 A .005
SHIM AS REQD. .060 MAX. SEE NOTE 1 (2 PLACES)
LDW280-12213-11 (REF)
.188
MS2047OAD5(2)
LDW280-12213-11
LDW280-12213-15(REF)
NAS1097AD5(2) C.S.K. F.S. IN LDW280-12212-11
LDW280-12213-15
9.438
LDW280-12213-17 (REF)
SHIM AS REQD .060 MAX SEE NOTE 1 (TYPICAL 2 PLACES)
MS2047OAD5(2)
NAS1097AD5(2) C.S.K. F.S. IN LDW280-12212-11
LDW280-12213-17
LDW280-12212-11
A
A
.095(REF)
.191
.190
.488
.190
.190
FULL RAD(2)
LDW280-12213-17(REF)
LDW280-12212-11(REF)
VIEW A-A
LDW280-12212-17(REF)
LDW280-12212-17
NAS1097AD3(2) CSK BOTH SIDES
ASSY
(A1) LDW280-12211-1 ASSEMBLY
.200-.206 DIA NAS1068A3 NAS1097AD3(2) CSK N.S. IN LDW280-12213-13
.063
LDW280-12213-13(REF)
.468
-B-
11 B .005
LDW280-12212-13(REF)
LDW280-12213-19(REF)
.468(REF)
SHIM AS REQD .060 MAX SEE NOTE 1 (2 PLACES)
LDW280-12213-13
.063
LDW280-12213-19(REF)
MS20470AD4(2)
NAS1097AD5(2) CSK F.S. IN LDW280-12212-13
MS20470AD4(2)
LDW280-12213-19
9.438
LDW280-12212-13(REF)
LDW280-12212-13
LDW280-12213-19(REF)
SHIM AS REQD .060 MAX SEE NOTE 1 (TYPICAL 2 PLACES)
B
B
MS20470AD4(2)
NAS1097AD5(2) CSK F.S. IN LDW280-12212-13
MS20470AD4(2)
LDW280-12213-19
LDW280-12212-15(REF)
LDW280-12212-15
NAS1097AD3(2) CSK BOTH SIDES
ASSY
(M) LDW280-12211-3 ASSEMBLY
FULL RAD (2)
.686
LDW280-12212-13 (REF)
.438(REF)
.191
.190
.190
LDW280-12213-19(REF)
SECTION B-B
NOTES
1. SHIM AS REQUIRED USING 2024T3 AL ALLOY SHEET, QQ-A-250/4, FINISH NO 7a
E
26512
LDW280-12211
A

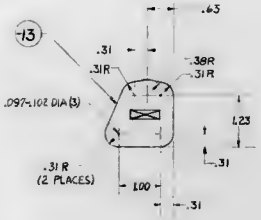
SUPPLEMENTARY DATA

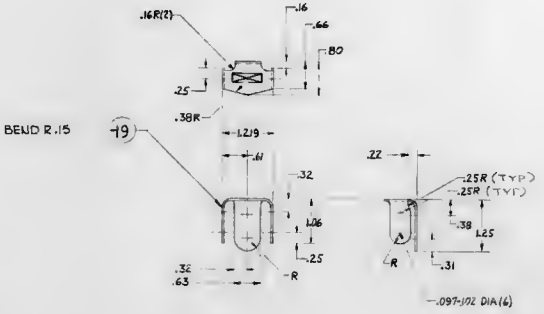
UNLESS OTHERWISE SPECIFIED
NOTE THAT "X" APPLY TO THIS DWG

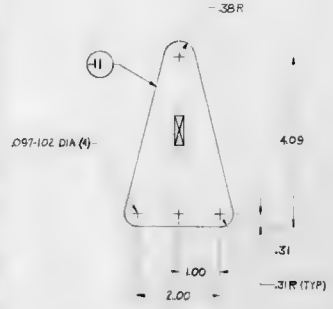
RUBBER STAMP PART NUMBER

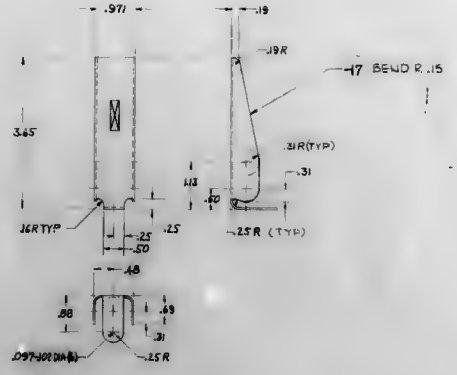
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS
2. CREW HAZARD - PARTS REQUIRE SPECIAL HAND_ING TO INSURE REMOVAL OF ALL SHARP EDGES & BURRS











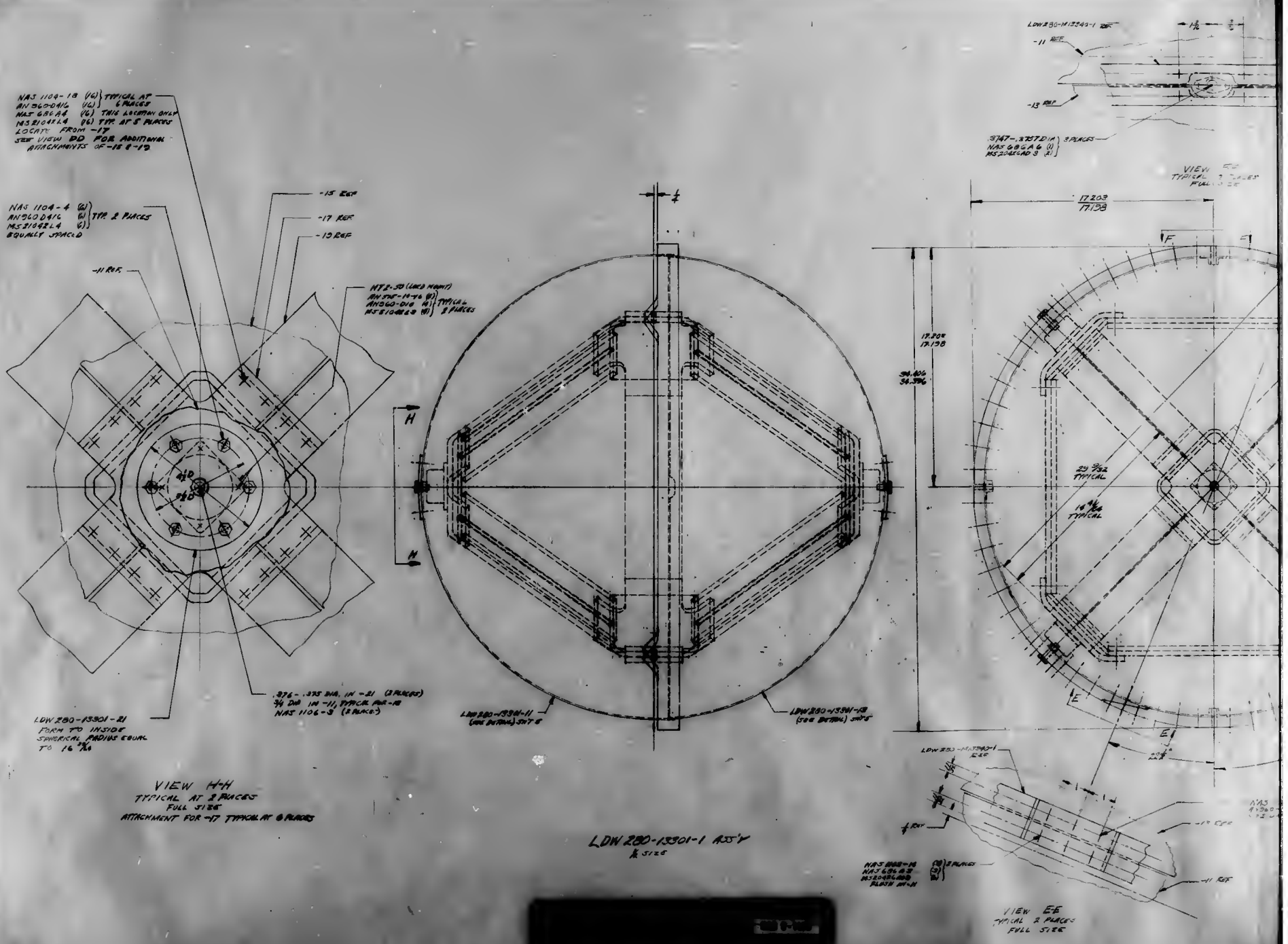
GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

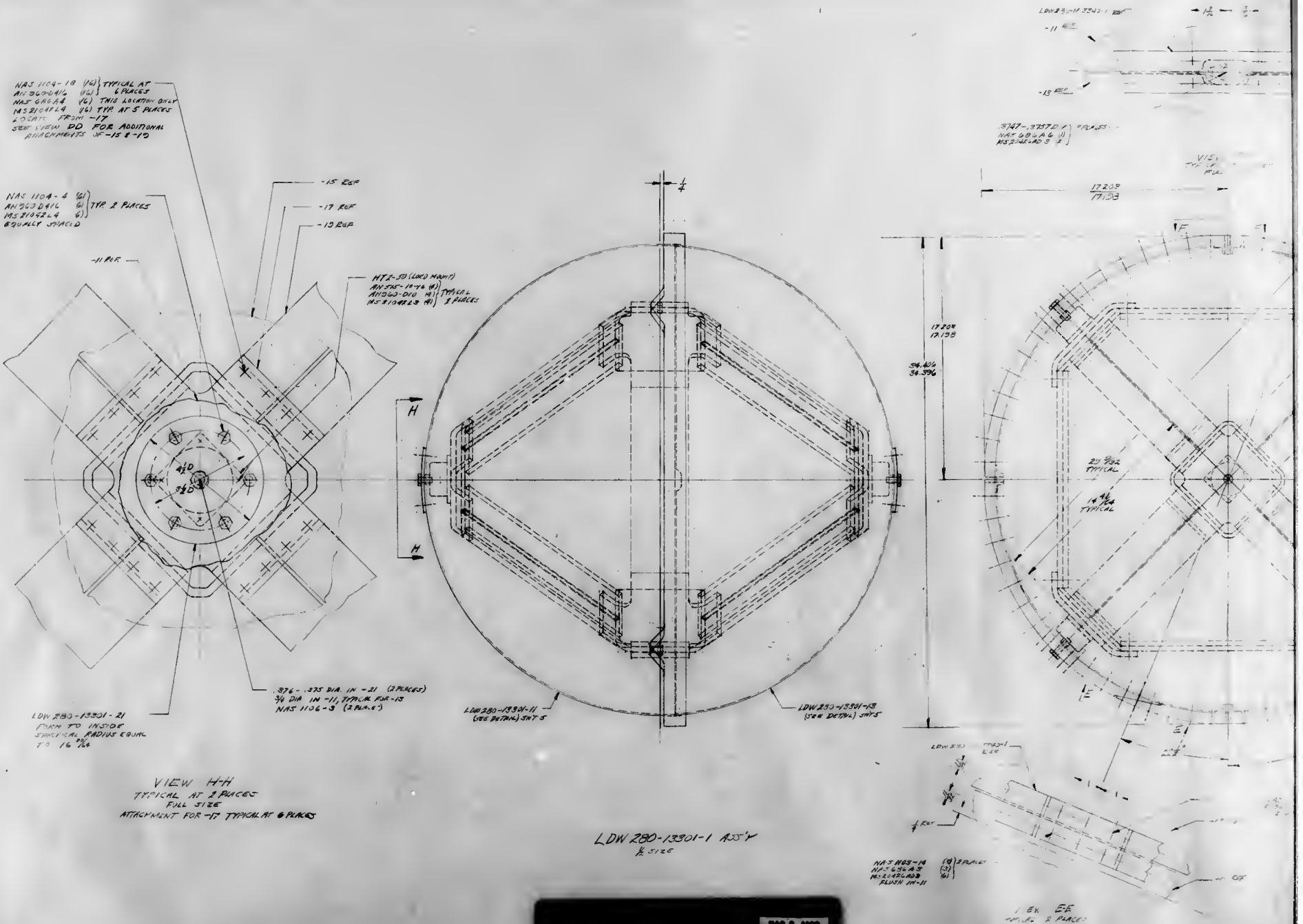
SIZE	CODE IDENT NO.	DWG NO.	REV
F	26512	LDW280-12213	A

SCALE FULL SHEET 9 OF 20

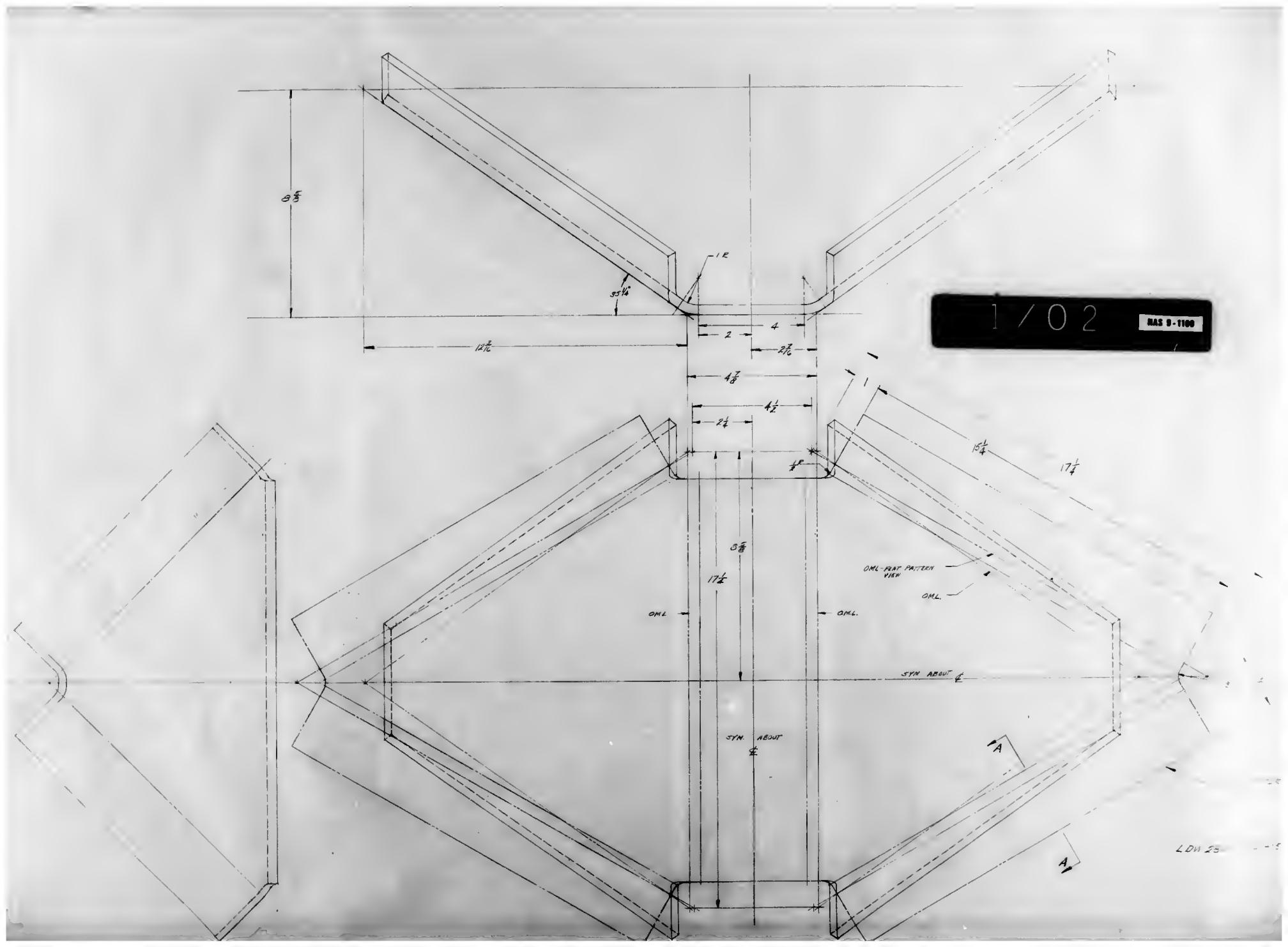
LDW280-12213

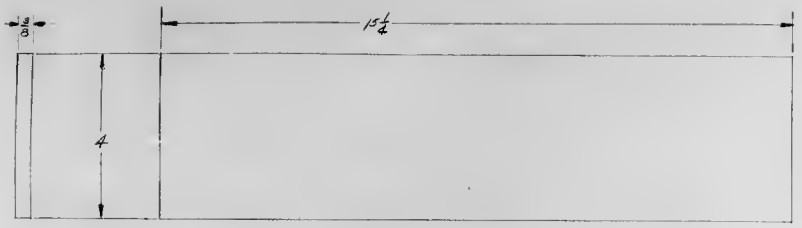
[redacted]


NAS 1104-18 (6) TYPICAL AT
AN960-D416 (6) 6 PLACES
NAS 686A4 (6) THIS LOCATION ONLY
MS21042L4 (6) TYP. AT 5 PLACES
LOCATE FROM -17
SEE VIEW DD FOR ADDITIONAL ATTACHMENTS OF -15 & -19
NAS 1104-4 (6) TYP. 2 PLACES
AN960D416 (6)
MS21042L4 (6)
EQUALLY SPACED
-15 REF
-17 REF
-19 REF
-11 REF
HT18-30 (LOCK NUT)
(ON PART -19-16 (6) TYPICAL
AN960-D10 (6) 8 PLACES
MS21042L3 (6)
.376-.375 DIA. IN -21 (3 PLACES)
3/8 DIA IN -11, TYPICAL FOR -19
NAS 1106-3 (2 PLACES)
LDW280-13901-21
FORM TO INSIDE
SPHERICAL RADIUS EQUAL
TO 16 3/16
VIEW H-H
TYPICAL AT 2 PLACES
FULL SIZE
ATTACHMENT FOR -17 TYPICAL AT 6 PLACES
LDW280-13901-11
(SEE DETAIL) SHT 6
LDW280-13901-19
(SEE DETAIL) SHT 5
LDW280-13901-1 ASSY
1/4 SIZE
LDW280-M13940-1 REF
-11 REF
-13 REF
.3747-.3737 DIA
NAS 686A6 (1)
MS20426AD3 (2)
3 PLACES
VIEW E-E
TYPICAL 3 PLACES
FULL SIZE
17.203
17.198
17.209
17.198
34.406
34.396
29 3/32
TYPICAL
16 3/16
TYPICAL
LDW280-M13940-1
REF
NAS 686-M
NAS 686A3
MS20426AD3
PLATE #7-M
3 PLACES
-11 REF
-13 REF

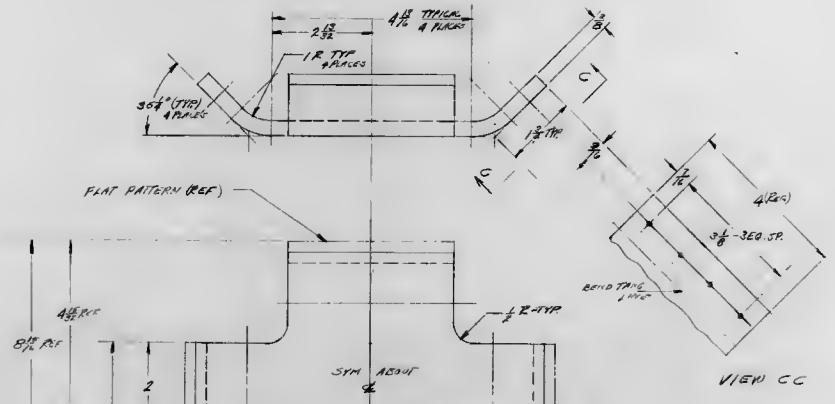

NAS 1104-18 (16)
AN 960-416 (16)
NAS 6A6A4 (16)
MS21042L4 (16)
LOCATE FROM -17
SEE VIEW DD FOR ADDITIONAL ARRANGEMENTS OF -15 & -19
TYPICAL AT 6 PLACES
THIS LOCATION ONLY
TYP. AT 5 PLACES
NAS 1104-4 (6)
AN960D416 (6)
MS21042L4 (6)
EQUALLY SPACED
TYP. 2 PLACES
-15 REF
-17 REF
-19 REF
-11 REF
MTJ-50 (LOCK) MOUNT
AN 746-1076 (6)
AN960-D10 (6)
MS21042L3 (6)
TYPICAL 2 PLACES
.376-.375 DIA. IN -21 (2 PLACES)
3/8 DIA. IN -11, TYPICAL FOR -13
NAS 1106-3 (2 PLACES)
LDW 280-13301-21
FORM TO INSIDE SPHERICAL RADIUS EQUAL TO 16 5/64
LDW280-13301-11 (SEE DETAIL) SHT 5
LDW280-13301-13 (SEE DETAIL) SHT 5
H
H
VIEW H-H
TYPICAL AT 2 PLACES
FULL SIZE
ATTACHMENT FOR -17 TYPICAL AT 6 PLACES
LDW 280-13301-1 ASS'Y
1/2 SIZE
-11 REF
-13 REF
3747-3757D (1)
NAS 6B6A6 (1)
MS21042D3 (2)
2 PLACES
17.209
17.198
34.404
34.396
29 9/32
TYPICAL
1 7/64
TYPICAL
LDW 280
1/4 REF
NAS 1103-14 (8)
NAS 6A6A3 (8)
MS21042D3 (16)
FLUSH IN -11
3 PLACES
E
E
E
E
VIEW E-E
TYPICAL 2 PLACES
FULL SIZE

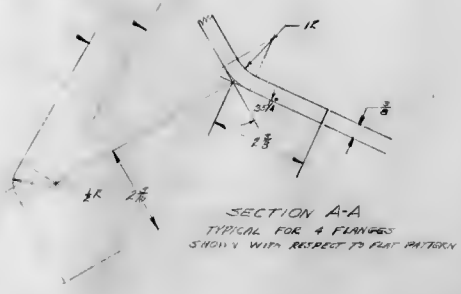
NAS 9-1100


1R
4
2
1
OML-FLAT PATTERN VIEW
OML.
OML
OML.
SYM ABOUT ℄
SYM. ABOUT ℄
A
A
1/02
NAS 9-1100



LDW 280-13301-19





LDW 280-13301-15

LDW 280-13301-17

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

- PAINT INTERIOR AND ALL OTHER SURFACES IN ACCORD WITH SPEC. MIL-P-23377 USE BOTH SIDES IF NECESSARY.
- FILLET AND RADIUS CORNER RADII TOLERANCES: .000 TO .024 ± .005; .025 TO .250 ± .010; OVER .250 ± .015
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 PIP THDS. BEYOND PERMISSABLE.
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT AREAS OR SURFACES MARKED WITH DURABLE ANTISEPTIC.
- SEGREGATION STEP OF ± .005 PERMISSIBLE DUE TO CROWN OF CUTTERS AT ARBOR INTERSECTING SURFACES.
- DIAMETRIC SHOWING MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL MACHINING SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0005 MIN. TO .0015 MAX. MIN. THICKNESS TO BE .0005 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES
- ▽ SURFACE ROUGHNESS (INCLUDING REAMED HOLES PER MIL-STD-26
- ▽ FOR ALL DRILLED HOLES
- REMOVE ALL BURRS BREAK ALL EDGES .005-.031
- INSPECTION INFORMATION MINIMUM PERPENDICULAR AIR GAGE RING DIAMETER IS GAGED IS
- SYMBOL ⌀ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF .125, .063 & .09 AT ALL BENDS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
- TOLERANCE ON LIMITED DELINEATIONS IS

/02

NAS 9-1100

LEM	J	26512	LDW280-13301
	SCALE FULL		SHEET 4

LDW280-13301

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	1	1.00, 1.10						EO A1	FOR LDW280-13302-1 & -2, N/A LDW280-23144 WAS LDW280-23002. SHT 1 OF 4 WAS 1 OF 3.	LTA-3	NOT	REQ'D	FITZGERALD 7/29/66		
	2	1.10, 2.00 3.00						EO A2	ON LDW280-13302-1 & -2 INSTL, LLG-H-12 (2) WAS G-H-12 (2). REVISED NOTE 1.	LTA-3	NOT	REQ'D			
	3	1.10 2.00 3.00	B4					EO A3	IN FLD & B/M (ON -1 & -2) ADDED NAS1304-4 (6), AN960-416 (6)	LTA-3	✓				
	4	1.00, 1.10, 2.00, 3.00	A7, A6					EO A4	ON -1 & -2 ADDED LDW280-13305-25, -26, GR500A-5E (4), GR500A-5G (16) WAS GR500A-5E (16) & 16 3/16 (REF) WAS 11.382		✓		B. YANOFF 3-1-66		
	5	1.00, 1.10, 2.00, 3.00	A7, A6					EO A5	ON -1 & -2 ASSY REMOVED LL-6-H-12 (4) FROM FLD & B/M		✓				
	6	1.10, 3.00							ADDED NOTE "2 & REMOVED NOTE" 1	NOT REQD	NOT	REQD			
	7	1.10, 3.00	B5					(R)	ADDED LDW280-23026 TO B/M & FLD. IN FLD WAS CALLED OUT IN REF.	LTA-3(13)	NOT	REQD	L. FREDA 10-7648		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY
	A	[illegible] 9/16/66		ES			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-13302	A

SCALE NOT [illegible] SHEET 1.10

0 1

NAS 9-1100

QTY PER ASSEMBLY -2	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COMP SPEC	STOCK SIZE	PROCESS SPEC	FINISH NO.	ZONE
8	8		GR500A-5G	E	RIVET, BLIND	GRUMMAN STD						
2	2		GR500A-5E	E	RIVET, BLIND	GRUMMAN STD						
6	6		AN960-416	E	WASHER	MIL. STD						
6	6		NAS1304-4	E	BOLT	MIL. STD						
8	8		NAS1105-7	E	BOLT	MIL. STD.						
2	2		AN924-12	E	NUT	MIL. STD.						
8	8		AN960-516L	E	WASHER	MIL. STD.						
2	2		AN832-12	E	UNION	MIL. STD.						
2	2		AN815-12	E	UNION	MIL. STD.						
2	2		AN814-3D	E	PLUG	MIL. STD.						
2	2		AN806-4D	E	PLUG	MIL. STD.						
2	2		GH12B-12-0124	E	HOSE ASSEMBLY	GRUMMAN STD.						
1	1		LDW280-13305-26	E	BRACKET	SEE DWG						
1	1		LDW280-1330525	E	BRACKET	SEE DWG						
1	1		LTM280M25495	E	RETAINER	SEE DWG.						
1	1		LSC310-405-16	E	FUEL TANK ASSY	SEE DWG.						
1	1		LSC310-405-15	E	OXIDIZER TANK ASSY	SEE DWG.						
1	1		LSC310-301-1	E	HELIUM TANK ASSY	SEE DWG.						
1	1		LDW280-23026-1	E	SUPPORT ASSY	SEE DWG						
1	1		LDW280-13305-1	E	UNIT ASSEMLY	SEE DWG.						
1	1		LDW280-13302-2	E	MODULE INSTL.					NONE	NONE	
1	1		LDW280-13302-1	E	MODULE INSTL.					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH: NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

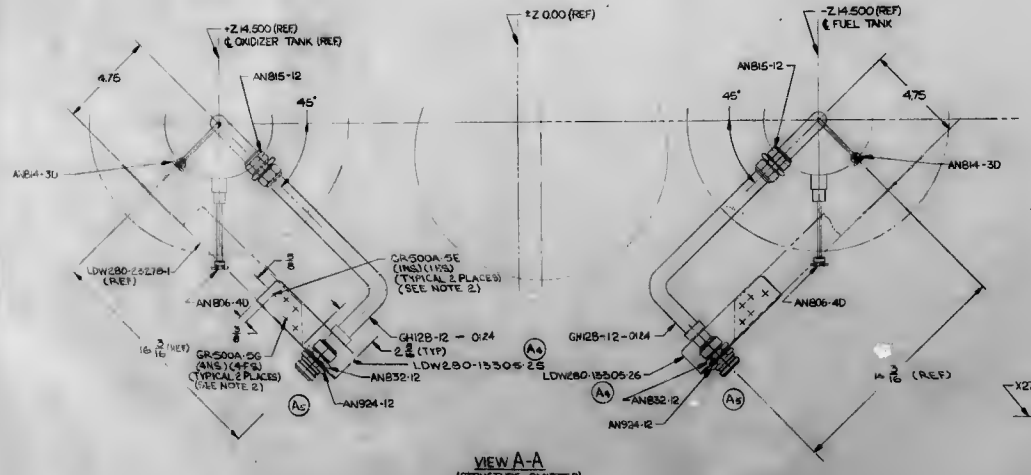
SIZE	CODE IDENT NO.		
B	26512	LDW280-13302	A

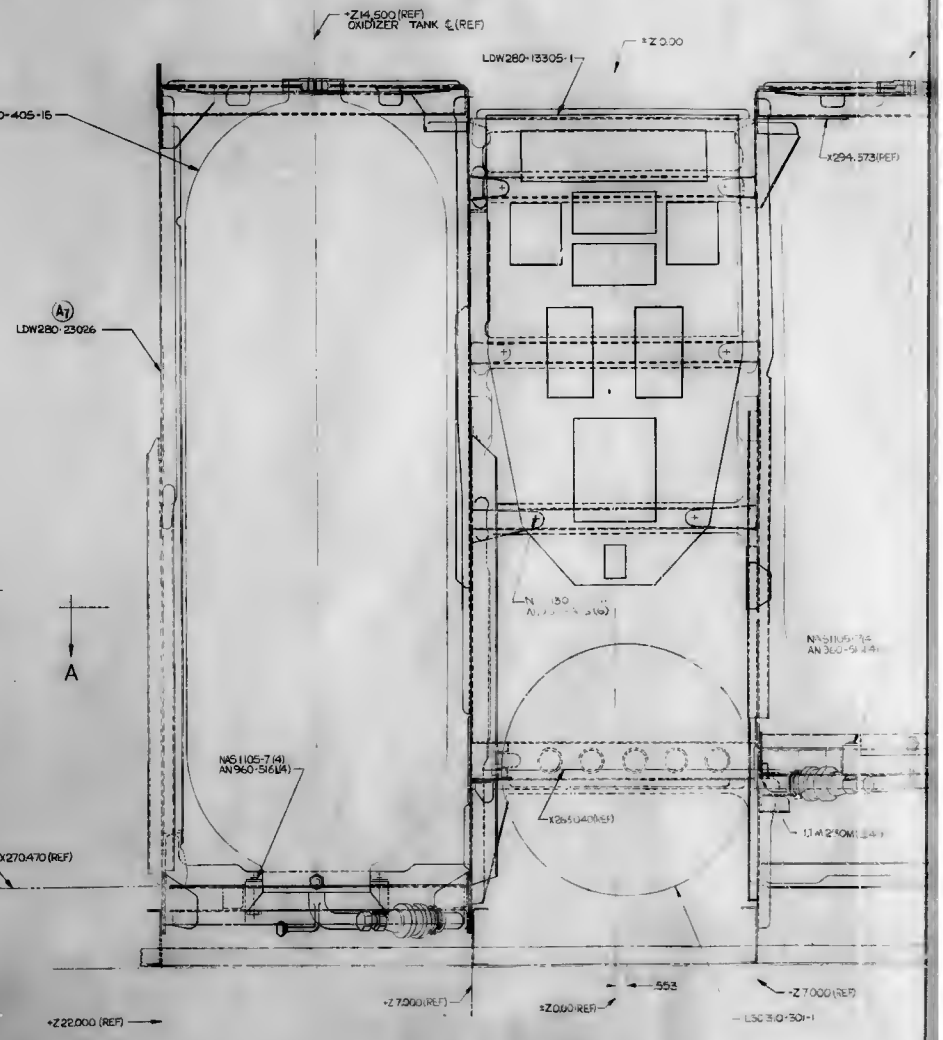
SCALE NONE SHEET 2.00

GAC 77.2 7-65

01

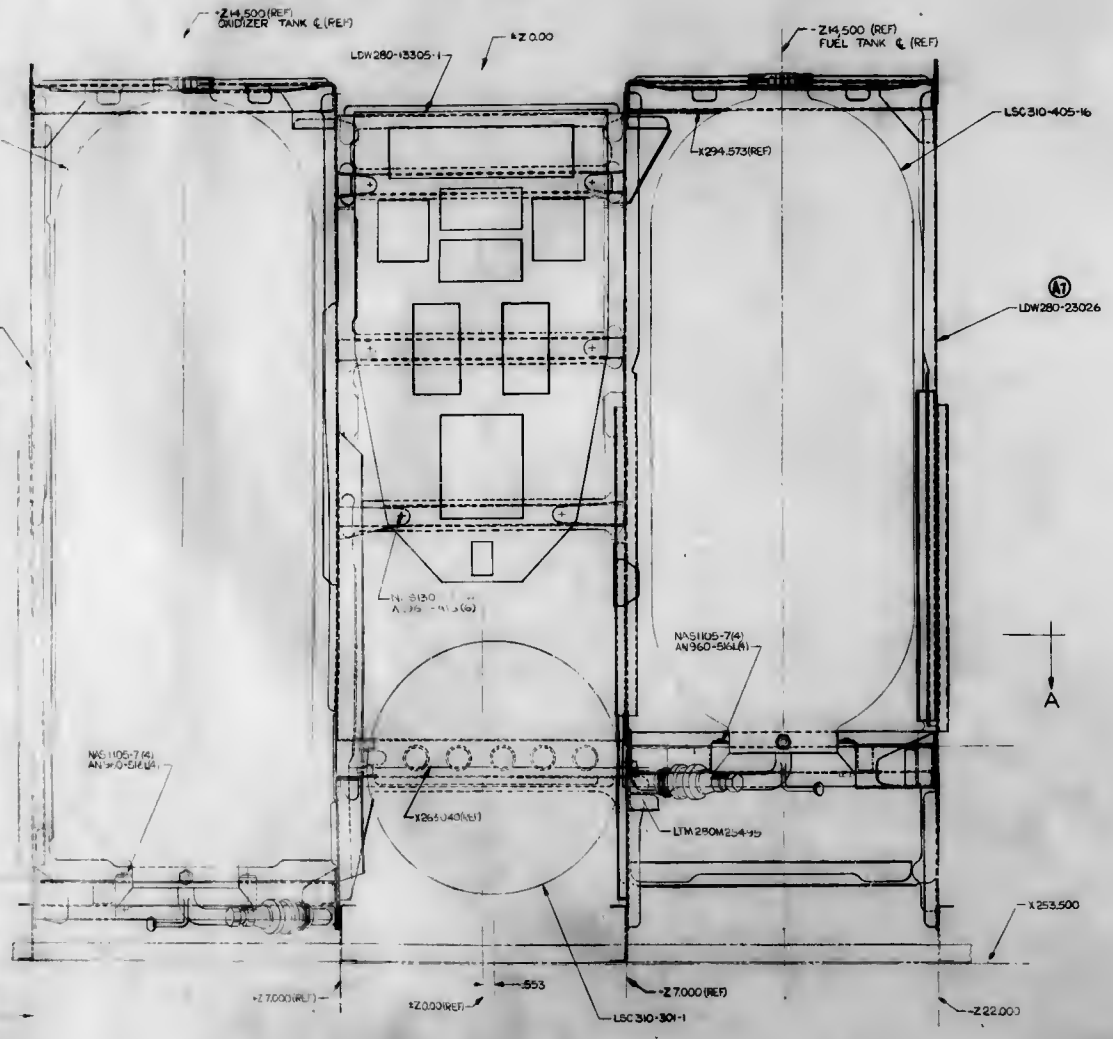
NAS 9-1100





LDW280-13302-1 (SHOWN)
LDW280-13302-2 (OPP)

CODE IDENT. 26512	SHT 3
LDW280-13302	



LDW280-13302-1 (SHOWN)
LDW280-13302-2 (OPP)

CODE IDENT. 26512		
LDW280-13302	SH 3	

NOTE

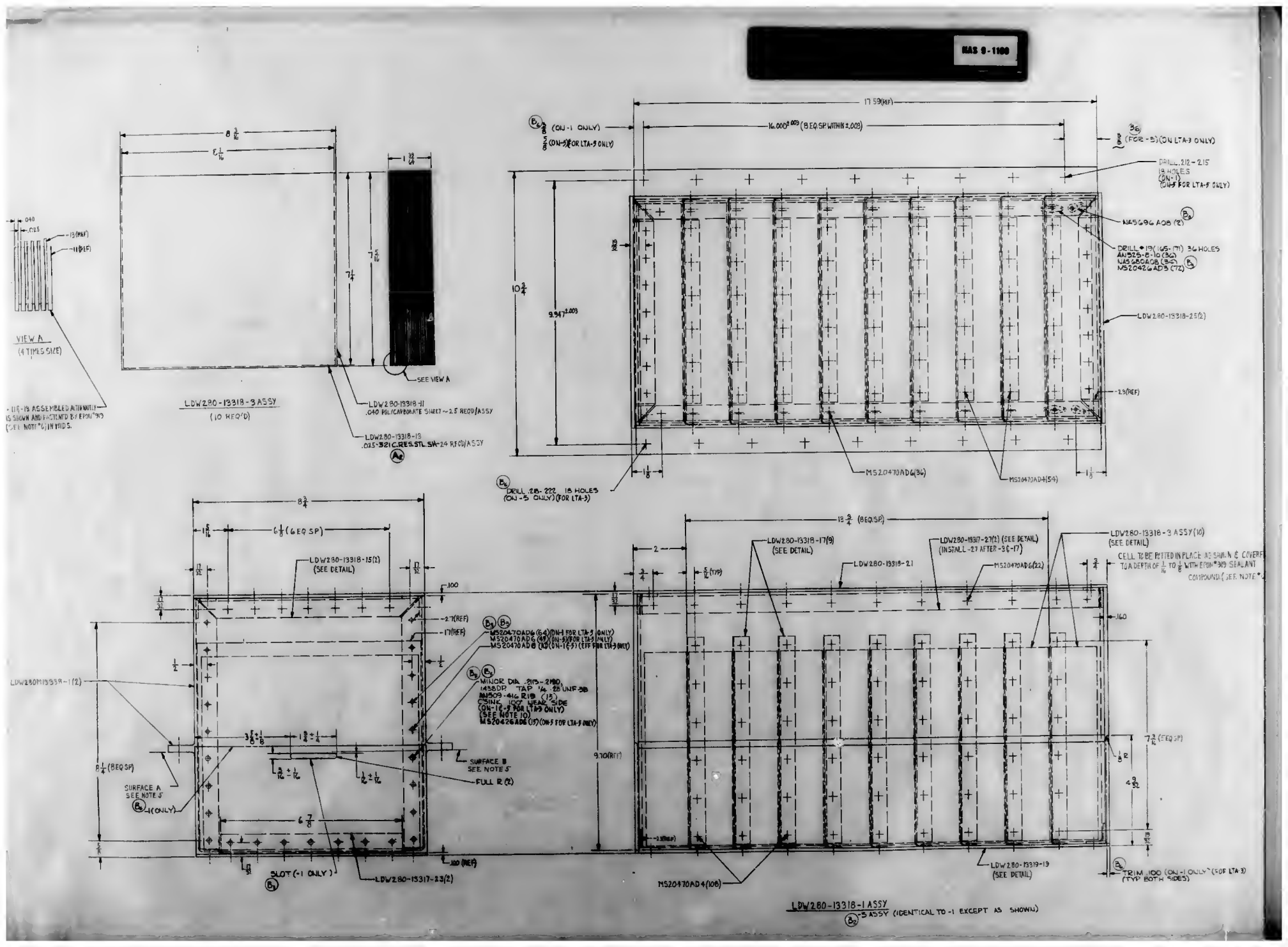
1. ~~COUPLING LLG 11-12 IS A PRODUCT OF THE HANSEN MFG. CO., 4031 W. 150 ST., CLEVELAND, OHIO~~
2. INSTALL FASTENERS PER LSP14-15303.

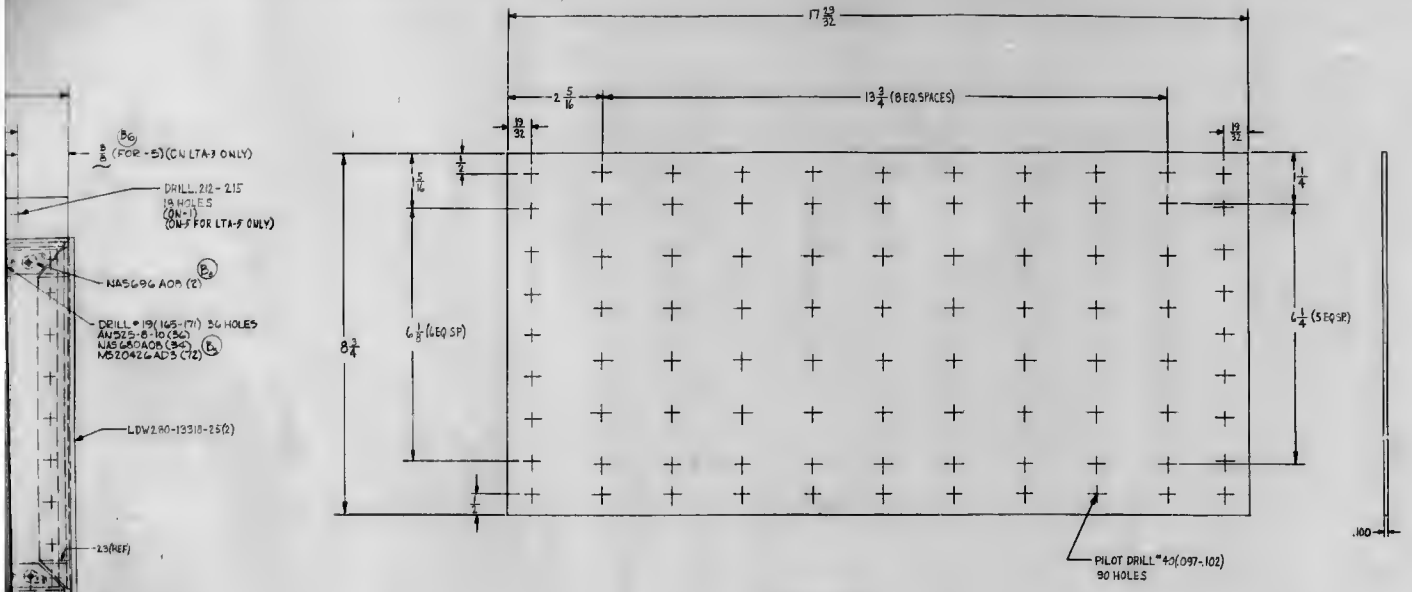
[redacted]

LEM	J	26512	LDW280-13302 A
	HALF		SHT 3 OF 3

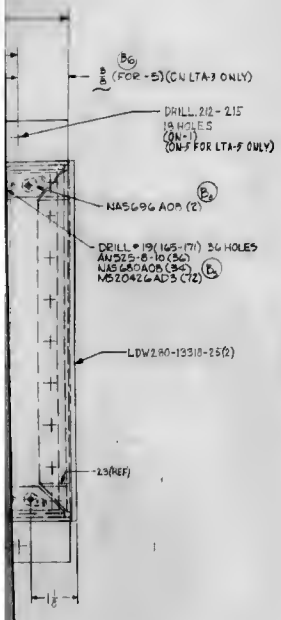
LDW280-13302 A

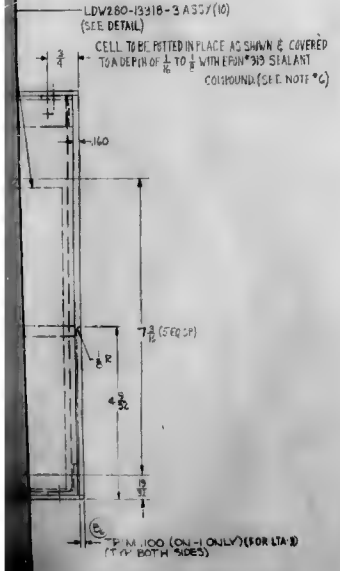
NAS 9-1100

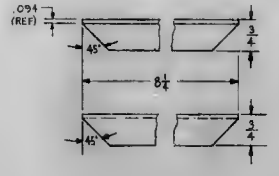

LDW280-13318-3 ASSY
(10 REQ'D)
VIEW A
(4 TIMES SIZE)
SEE VIEW A
LDW280-13318-11
.040 POLICARBONATE SHEET ~ 2.5 REQ'D/ASSY
LDW280-13318-13
.025-321 C.RES.STL. SH-24 REQ'D/ASSY
LDW280-13318-1 ASSY
-5 ASSY (IDENTICAL TO -1 EXCEPT AS SHOWN)
(ON -1 ONLY)
(ON -5 FOR LTA-5 ONLY)
(FOR -5) (ON LTA-3 ONLY)
DRILL .212 - .215
18 HOLES
(ON -1)
(ON -5 FOR LTA-5 ONLY)
NAS696 A08 (2)
DRILL #19 (.165-.171) 36 HOLES
AN525-8-10 (36)
NAS680A08 (36)
MS20426AD5 (72)
LDW280-13318-25(2)
2.9 (REF)
MS20470AD4(54)
MS20470AD6(36)
DRILL .218-.222 18 HOLES
(ON -5 ONLY) (FOR LTA-3)
LDW280M13339-1(2)
SURFACE A
SEE NOTE 5
SURFACE B
SEE NOTE 5
FULL R (2)
SLOT (-1 ONLY)
LDW280-13317-23(2)
LDW280-13318-15(2)
(SEE DETAIL)
MS20470AD6 (54) (ON -1 FOR LTA-5 ONLY)
MS20470AD6 (49) (ON -5) (FOR LTA-5 ONLY)
MS20470AD6 (10) (ON -1 & -5) (EFF FOR LTA-5 ONLY)
MINOR DIA .213-.219
1438DP -TAP 1/4 -28 UNF-3B
MS9209-416 R18 (15)
CSINK 100° HEAD SIDE
(ON -18 -5 FOR LTA-5 ONLY)
(SEE NOTE 10)
MS20426AD5 (15) (ON -5 FOR LTA-5 ONLY)
LDW280-13318-17(9)
(SEE DETAIL)
LDW280-13318-2.1
LDW280-13317-27(2) (SEE DETAIL)
(INSTALL -27 AFTER -3 & -17)
MS20470AD6(22)
LDW280-13318-3 ASSY(10)
(SEE DETAIL)
CELL TO BE POTTED IN PLACE AS SHOWN & COVERED
TO A DEPTH OF 1/16 TO 1/8 WITH EPON*919 SEALANT
COMPOUND (SEE NOTE *)
LDW280-13319-19
(SEE DETAIL)
MS20470AD4(108)
TRIM .100 (ON -1 ONLY) (FOR LTA-3)
(TYP BOTH SIDES)



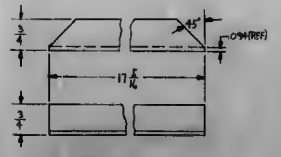
LDW280-13318-19
(1 REQ'D)



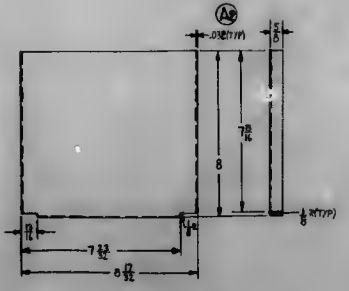

LDW280-13318-3 ASSY (10)
(SEE DETAIL)
CELL TO BE POTTED IN PLACE AS SHOWN & COVERED TO A DEPTH OF 1/16 TO 1/8 WITH EPON #913 SEALANT COMPOUND (SEE NOTE #6)
.160
7 3/16 (5 EQ SP)
1/8 R
4 3/32
19/32
E2
.100 (ON -1 ONLY) (FOR LTA-3) (TYP BOTH SIDES)



LDW280-13318-15
(MAKE FROM EXTR #78C ~ 2 REQ'D)



LDW280-13318-27
(MAKE FROM EXTR #78C ~ 2 REQ'D)



LDW280-13318-17
(9 REQ'D)
1/2 SCALE

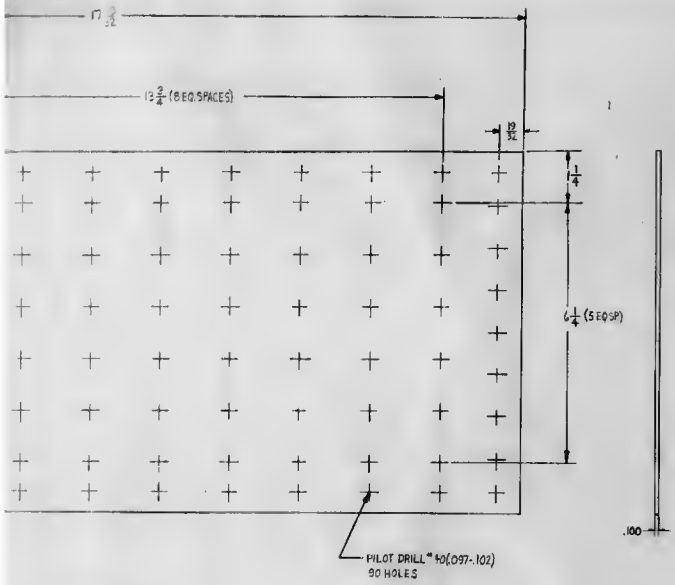
SYMBOL LEGEND

SYMBOLS ARE FOR QUANTITY & LOCATION ONLY

NOTES

1. DRAWING MAY BE SCALED FOR DIMENSIONS NOT OTHERWISE
2. ALL PARTS I & T EXEMPT.
3. TOLERANCE ON DETAIL PARTS ±1/32 UNLESS NOTED.
4. NO TOOLING HOLES PERMITTED UNLESS NOTED
5. SURFACES 'A' & 'B' TO BE IN SAME PLANE WITHIN .010
6. MIX & PREPARE EPON 913 PER LSP14-14102 AND APPLY CURE 5 DAYS AT ROOM TEMPERATURE OF 3 HOURS AT 82°
7. -11 POLYCARBONATE SHEET TO CONFORM TO SPEC GMPS 4002.
8. ~~PIN SH -17, -19, -21 & -25 PER MIL-P-45202 TYPE II CLASS D~~
9. FOR -17-19, -21 & -25, APPLY ZINC CHROMATE PRIMER (MIL-P-8585A) PER LSP 4-4302. FINISH WITH BLACK LACQUER #37038 PER FED STD #595, MIL-E-6805.
10. PRIOR TO INSTALLATION OF ASSY TO VE-1 REMOVE SCREWS (BOTH ENDS OF ASSY) & R SCREWS WITH EPON 913 PER LSP14-14102A

BAS 0-1100



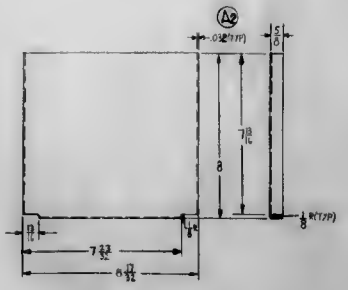
LDW280-13318-19
(1 REQ'D)

NOTES:

1. DRAWING MAY BE SCALED FOR DIMENSIONS NOT SHOWN
2. ALL PARTS I & T EXEMPT.
3. TOLERANCE ON DETAIL PARTS ± 1/32, UNLESS NOTED.
4. NO TOOLING HOLES PERMITTED UNLESS NOTED.
5. SURFACES 'A' & 'B' TO BE IN SAME PLANE WITHIN ± .010.
6. MIX & PREPARE EPON 919 PER LSP14-14102 AND APPLY. CURE 5 DAYS AT ROOM TEMPERATURE OR 3 HOURS AT 180°
7. -11 POLYCARBONATE SHEET TO CONFORM TO SPEC. GMPS 4002.
8. ~~FINISH -17, -19, -21 & -25 PER MIL-P-15202 TYPE II, CLASS B~~
9. FOR -17, -19, -21 & -25, APPLY ZINC CHROMATE PRIMER (MIL-P-8585A) PER LSP14-4302. FINISH WITH BLACK LAQUER #37038 PER FED STD #595 MIL-E-6805
10. PRIOR TO INSTALLATION OF ASSY TO VEHICLE, REMOVE SCREWS (BOTH ENDS OF ASSY) & REINSTALL SCREWS WITH EPON 919 PER LSP14-14102A.

SYMBOL LEGEND

SYMBOLS ARE FOR QUANTITY & LOCATION ONLY



LDW280-13318-17
(9 REQ'D)
1/4 SCALE

RECORD DATA		
MODULE	EO. NO	EFFECTIVITY
LM	B4	LTA-51-5

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS TO BE LEGIBLY APPLIED PER MIPR 30825-P DEPARTMENT.

FILLET AND BEND RADII
RADII TOLERANCE
.000 TO .250 ± .03
.251 TO .500 ± .06
.501 .000 ± .09

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2.5 DIA THDS. BEYOND PERMISSIBLE

EXTERNAL THREAD LENGTH UNDER CHAMFER 2 DIAMETRIC THREADS MIN.

DO NOT CHROMIZE PLATE & PAINT HOLES OR SURFACES BRANDED WITH DOUBLE ASTERISK.

DIMENSION STEP OF ± .005 PERMISSIBLE FOR TO CHANGE OF CUTTERS AT BROKEN INTERSECTING SURFACES.

DIRECTIONS MARKED SHOW BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES SHOW IS KEPT FREE OF CHROMIC PLATING SOLUTIONS.

ALL DIMENSIONS SHOWN TO BE MET AFTER CHROMIC PLATING. THICKNESS OF PLATE .000 MIN. TO .000 MAX. MIN. THICKNESS TO BE HELD ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

SURFACE ROUGHNESS INCLUDING SHADED HOLES PER MIL-STD-10

PAD ALL SHADED HOLES

CHAMFER ALL EDGES BREAK ALL EDGES .005-.015

INSPECTION DIMENSIONS MARKED PERMISSIBLE. ANODIC MASK DISTANCE SHOWN IN

CUTOUT / MISSING SURFACE TO BE BACKED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/64

DRAWING OF ALL AND A SEE AL ALT SHEETS SHOWN FROM 1 SHEET NOT SPECIFIED.

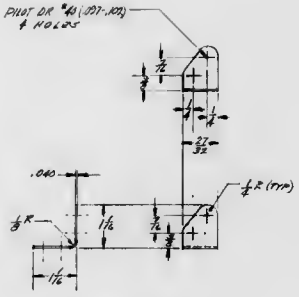
TOLERANCE ON LOFTED DIMENSIONS IS

LDW280-13318

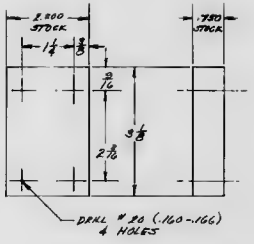
LDW280-13318 B

MAS 0-1100

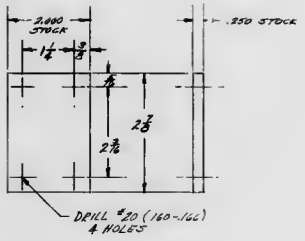
LEH	J	26512	LDW280-13318 B
			SCALE 3.00



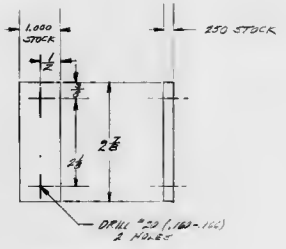
LDW 280-13357-17



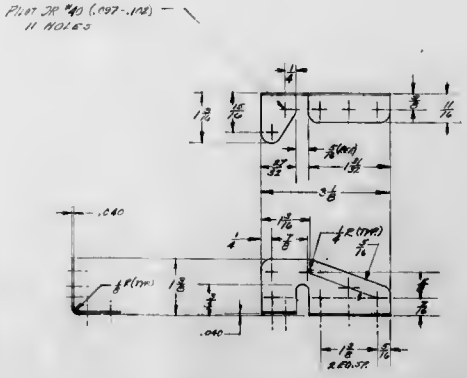
LDW 280-13357-19



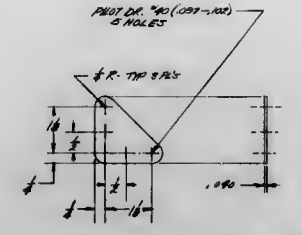
LDW 280-13357-21



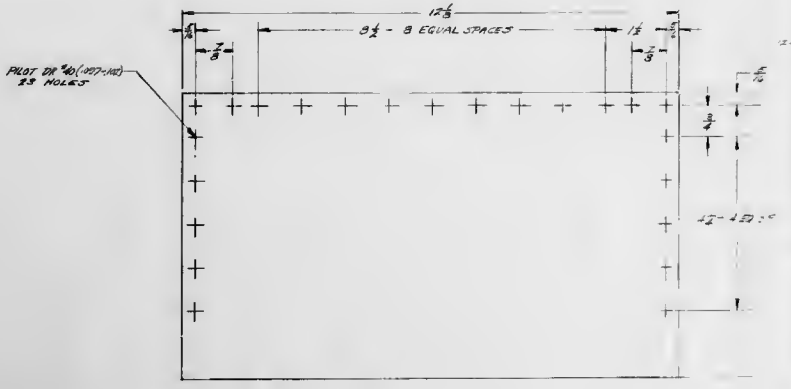
LDW 290-13357-23



LDW 280-13357-15 (L.H. SW'KG)
LDW 280-13357-16 (R.H. OPR.)

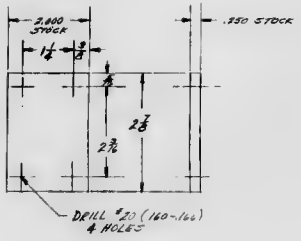


LDW 280-13357-13

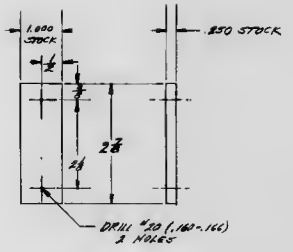


LDW 290-13357-11

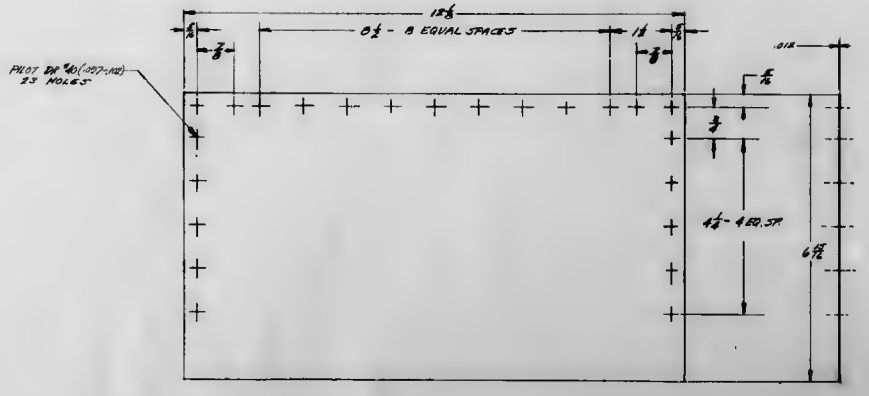
BAE 0-1100



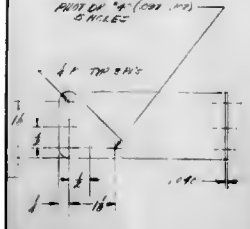
LDW 280 - 13357 - 21



LDW 280-13357-13



LDW 280-13357-11



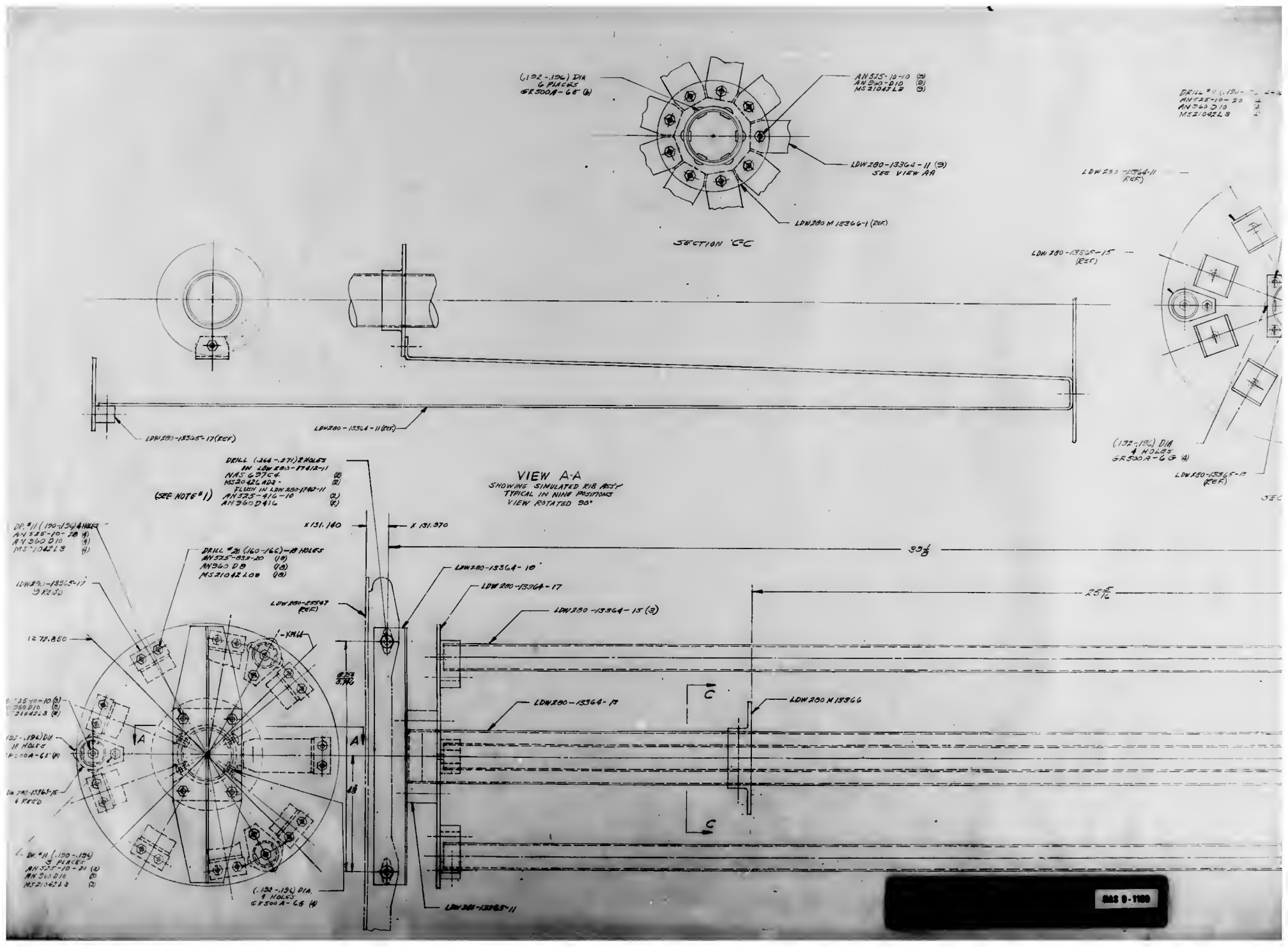
LDW 28[illegible] -13357-12

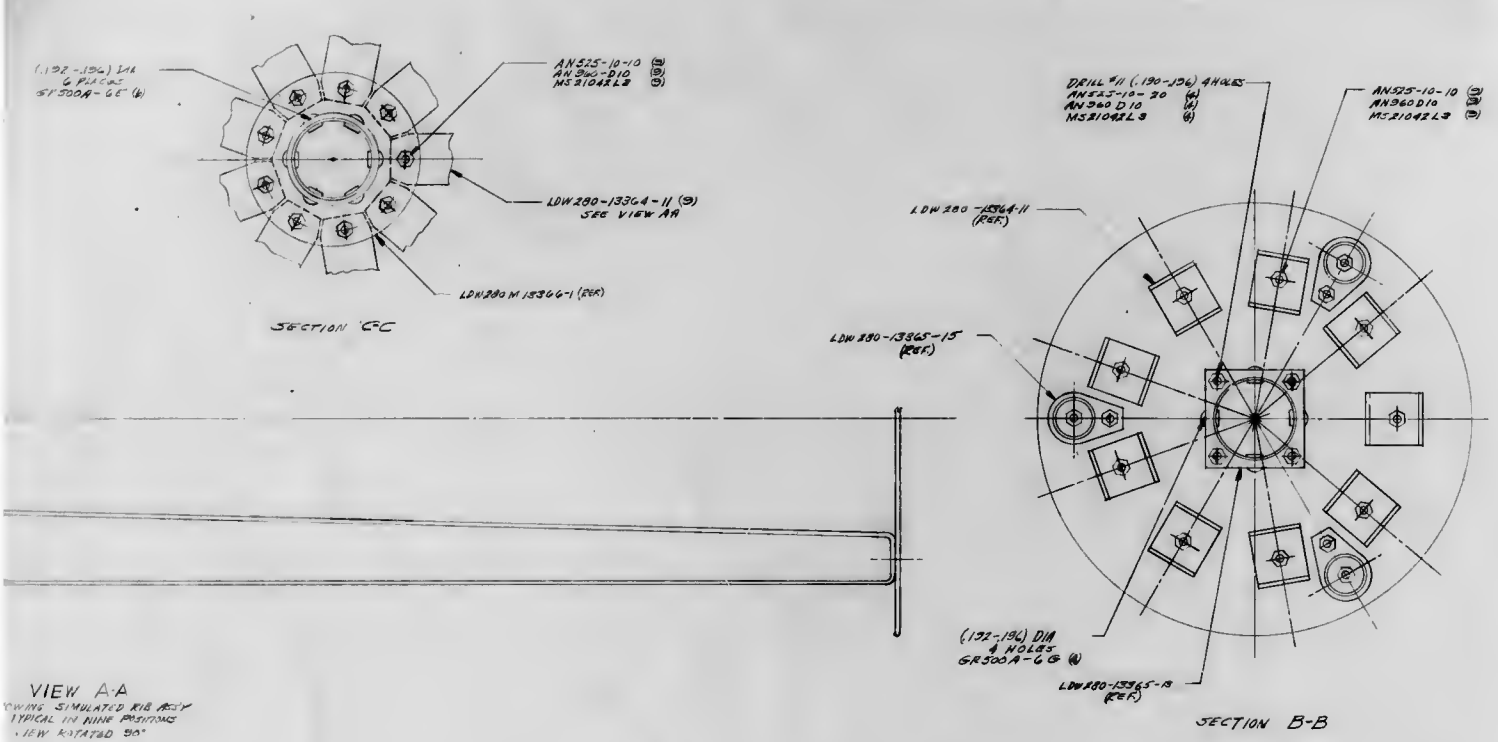
NOTE
1- ADVANCE RELEASE, TO BE REDRAWN ON PRODUCTION FORMAT.

[redacted]

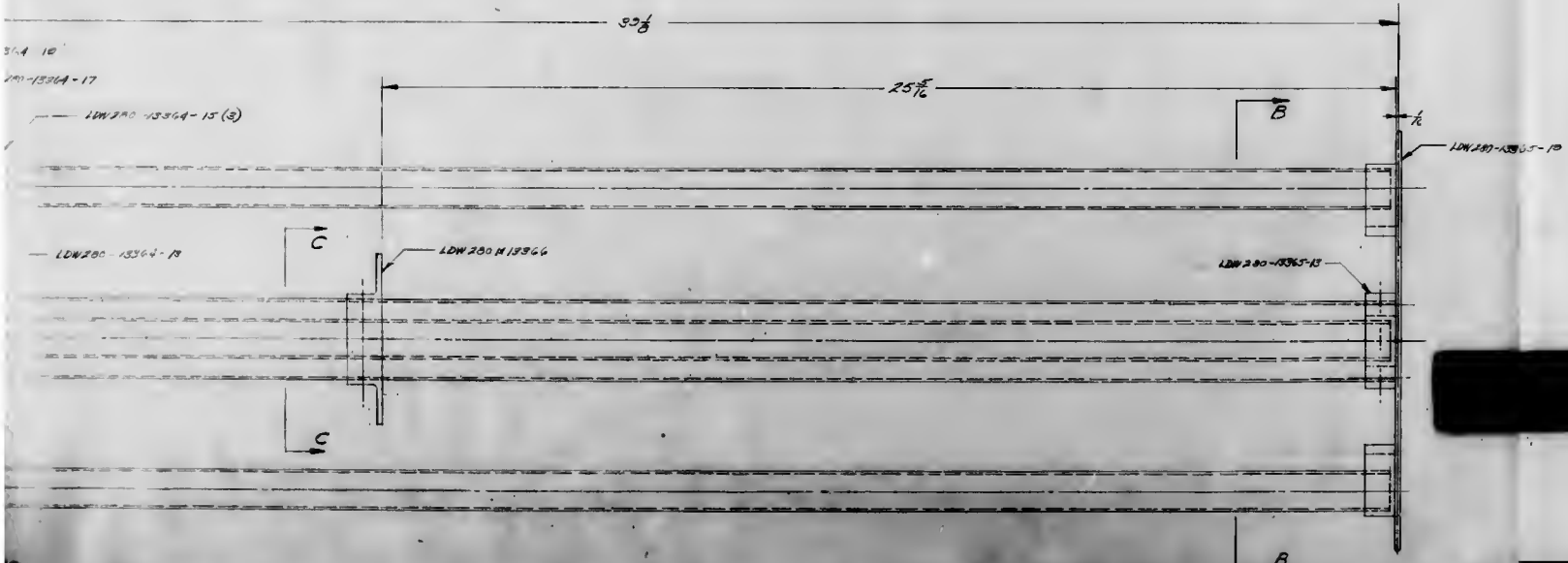
LEN	J 26512	LDW280-13357

LDW280-13357


(.132-.196) DIA
6 PLACES
GR500A-6E (6)
AN515-10-10 (3)
AN960-D10 (3)
MS21042L3 (3)
LDW280-13364-11 (3)
SEE VIEW AA
LDW280M18366-1 (REF)
SECTION C-C
LDW280-13365-17 (REF)
LDW280-13364-11 (REF)
LDW280-13365-15 (REF)
(.132-.196) DIA
4 HOLES
GR500A-6E (4)
LDW280-13365-13 (REF)
VIEW A-A
SHOWING SIMULATED RIB ASSY
TYPICAL IN NINE POSITIONS
VIEW ROTATED 90°
DRILL (.266-.271) 2 HOLES
IN LDW280-17412-11
NAS6204K (2)
MS20426AD2-
FLUSH IN LDW280-17412-11 (2)
AN525-416-10 (2)
AN960D416 (2)
(SEE NOTE #1)
DRILL #21 (.160-.166) -18 HOLES
AN525-832-20 (18)
AN960D8 (18)
MS21042L08 (18)
DP. #11 (.190-.196) 4 HOLES
AN525-10-28 (4)
AN960D10 (4)
MS21042L3 (4)
LDW280-13365-17
9 REQ'D
LDW280-25567
(REF)
X 131.140
X 131.970
39 1/8
25 5/16
LDW280-13364-10
LDW280-13364-17
LDW280-13364-15 (3)
LDW280-13364-13
LDW280M18366
LDW280-13365-11
12 78.850
.XMLG
6.276
3.746
4.8
A
A
C
C
(.132-.196) DIA
9 HOLES
GR500A-6E (9)
DP. #11 (.190-.196)
3 PLACES
AN525-10-28 (3)
AN960D10 (3)
MS21042L3 (3)
BAS 8-1100



VIEW A-A
SHOWING SIMULATED RIB ASSY
TYPICAL IN NINE POSITIONS
VIEW ROTATED 90°



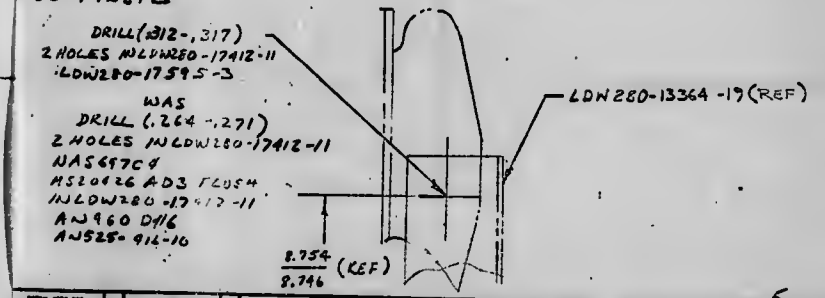
NOTE
1- IN THERMAL SHIELD, PIERCE HOLE (.250 DIA. MAX.) WITH BLUNT INSTRUMENT FOR FASTENER INSTALLATION. (2 PLACES.)

NAS 9-1100

LGM	H	26512	LDW280-13363

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 24512
ENGINEERING ORDER

DWG NO. LDW280-13363 ED NO. A5
CONTROL INFO NO. LM 511194



5

MATING RECEPTACLE ALREADY INSTALL ON VEHI...

ON -1 INSTL LDW280-17595-3, DRILL (.312-.317) WAS DRILL (.264-.271), NAS697C4, MS20426AD3 AN960 D416, AN525-916-16

EFFECTIVITY: LM, LTR

PURPOSE: C

DRAWING TITLE: ANTENNA INSTL PROV DR-SIMULATE S-BAND ERECTAN...

DRAWING NO. LDW280-13363

ISSUED BY R RASAS 16454 SECTION VIDI GROUP NO. 355 PL 5

093

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS
2. WEIGHT OF -17, 8, -19 & 20 CHEM MILLED ANGLES AFTER FINAL TRIM (BUT BEFORE RIVET HOLES ARE DRILLED) IS NOT TO EXCEED 3.8 LBS. FOR -17-18 & 11 LBS FOR -19-20
3. TOLERANCE ±.125 AT TANGENCY POINTS OF CHEM-MILL LINE CORNER RADII BETWEEN TWO ETCHED SURFACES
4. FLAT PATTERN DEVELOPED IN .030 THICKNESS.
LDW280-14106-17 (SHOWN) -18 (OPP)
BEND R 1/2
IML BDN
CHEM MILL LINE
GH11F-22 2 DIA FLG DN 5 PLACES
GH11F-20 2 DIA FLG DN 2 PLACES
DRILL #40 (.097-.102) 142 HOLES
DRILL #40 (.097-.102) 59 HOLES
.050 (CONST)
CHEM MILL LINE (TYP)
SEE NOTE #3 (TYP)
LDW280-14106-19-20
LDW280-14106-17-18
LDW280-14106-18 (SHOWN) -20 (OPP)
BEND R 1/2
(SEE NOTE #4)
01
NAS 9-1780
FOR PHOTO REPRODUCTION
BRUNSWICK AIRCRAFT ENGRG CORP BETHPAGE L. I. NEW YORK
SIZE E
CODE IDENT NO. 26512
LDW280-14106
REV B
SHEET 5
LDW280-14106 B
LDW280-14106 B

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	1	1, 1.10, 2 & 3		A					EO-A1	SH 1 OF 4 WAS 1 OF 3. ADDED SH 1.10. REMOVED -11, -12. ADDED -15 & -16. REVISED CHEM-MILL TRIM OF -14 TO AGREE WITH -13	NOTED		-11 -12,	E. SCHMIDT 5-10-65		
	2	1, 2, 3		A	DCRF 323-304					ADDED -17, -18, -19 & -20 & NOTES 2 & 3 REMOVED -13, -14, -15 & -16			-13, -14, -15 & -16			
	3			A						IN M/B LEM-2 & -3 ADDED.		NOT	REQD			
B	1	1.10 & 3		B						IN FIELD OF DWG ADDED NOTE #4	NOTED	NOT	REQD			
C	1	1 & 1.10		C					EO C1	IN MOD BLK REMOVED LTA-5 REQUIREMENTS N/A LDW 280-28411 WAS LDW280-25411	LTA-5 & -8 LEM-1, 2 & -3		-17, 18 -19 & -20	HERB. SCHWETER 10-13-65		
	2	1 & 1.10		C					EO C2	IN M/B FOR -17 THRU -20 ADDED REQMTS FOR VIBRATION TEST	NOTED	NOT	REQD			
	3	3		C						IN F/D FOR -18 & -20 CALLOUT (OPP) WAS (OPP EXCEPT AS NOTED) DWG CORRECTION		NOT	REQD			
	4	1 & 1.10								IN M/B FOR -17 THRU -20 DELETED LTA-3 & LEM-3 EFF			V			

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-14106	C
SCALE NONE		SHEET 1.10	

[redacted]

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	1	1, 1.10		A					LE0280-19	ADDED LEM-2(32) & LEM-3(33) EFF. FOR ALL DASH NUMBERS. (SH. 1 OF 4 WAS SH. 1 OF 3, ADDED SH. 1.10).	LEM-2(32) LEM-3(33)	NOT	REQ'D			
	2	2		A					LE0280-20	FOR ALL DASH NOS, REMOVED FINISH *76 & ADDED FINISH *88.	NOTED	✓				
B	1	1 & 1.10		B				✓	EO B1	REMOVED LTA-5(15) REQUIREMENTS N/A LDW280-28405 WAS LDW280-25405 FOR -11	LTA-5 & -8 LEM-1, 2 & -3		-11			
	2	1 & 1.10		B					EO B2	FOR-11 ADDED REQUIREMENTS FOR VIBRATION TEST	NOTED	NOT	REQ'D			
	3	1.00			DCRF323-679					FOR-11 IN MOD BLK REMOVE LTA-3 & LEM-3 EFF	LTA-3, LEM-3		-11			
C	1	1 & 1.10							LE0280-71	FOR-11 IN MOD. BLK., N/A WAS LDW 280-28405 FOR LEM-1 & LEM-2 EFF.	LEM-1, -2	NOT	REQ'D			

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 8-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-14114	C

SCALE NONE SHEET 1.10

[redacted]

NAS 9-11

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO 26512
ENGINEERING ORDER

DWG NO LDW280-14120 ED NO C1
CONTROL DATA NO LDW280A 9991

IN MOD. BLOCK FOR -1.

ADD - END ITEM LFM #131
N/A LDW280-28411
MODULE LTA-8(1B)
QUAN - 1 REQ'D/VEHICLE

LFM

LCD 1021-38 PAGE #1

IMPLEMENTATION OF REDUNDANT COOLANT LOOP.

CN -1 = ADDED END ITEM LFM #131, N/A LDW280-28411 (1 REQD), LTA-8 EFF.

LM LFM #131 LTA-8(1B)

C CHANNEL ASSEMBLY-ALGB COLD PLATE LDW280-14120 C1

ISSUED BY F. RADE X7033 SECTION VEH. DEF. INT GROUP NO. 375 PL 25

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SPECIFICATION CHANGE NOTICE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1 & 1.10							LEO280-50	FOR-11, ADDED REQ. FOR VIBRATION TEST	VIBRATION TEST	NOT	REQD	L. DIXON 2-2-66		
	2	1 & 1.10							EO A2	IN MOD. BLK. FOR -11 & -13 REVISED N/A WAS LDW280-23416 FOR LTA-8, LEM-1 & LEM-2	NOTED	NOT	REQD			
	3	1, 1.10 & 3							EO. A3	ON-11 ADDED DRILL #50 2 HOLES & REDUCED OVERALL SIZE BY 1/16.	LEM-1, 2, LTA-8 & VIBRATION TEST	✓		CARLINO 2-18-66		
	4	1 & 1.10			DCRF 323-705					REMOVED LTA-3 & LEM-3 EFF.	LTA-3 & LEM-3		✓	LD		
	5	1.00 & 1.10							ⓐ	FOR-11 REMOVED VIBRATION TEST REQ. wcg	VIB TEST		-11	[illegible]		

FOR CONTINUATION OF REVISIONS SEE SHEET

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-14125	A

SCALE NONE — SHEET 1.10

GRS 77.3 8-64

0 1

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1,1.10,2&3							RETRACED NO CHANGE LAST REVISION NO CHANGE. SH. 1 OF 4 WAS 1 OF 1. LOFTED DWG WAS DIMENSIONED.	LTA-B, LEM-1-2	NOT	REQD	JAEGGI 8-12-66		
B	1	1.00						LEO 280-134	FOR-1, -3 & -5 ADDED LTA-3, LEM-3 THRU -6 EFF	LTA-3, LEM-3 THRU LEM-6	NOT	REQD	ED. BAFFO 11-26-68		
	2							EO B2	FOR-5, 2 REQD (WAS) 1 REQD FOR: N/A LDW280-23424 LTA-3, N/A LDW280-53424 LEM-3, & N/A LDW280-54424 LEM-4, -5 & -6.						
	3							LEO 280-204	FOR-1, -3 & -5 ADDED LEM-7 THRU LEM-15 EFF.	LEM-7 THRU LEM-15					
	4							LEO 280-306	ADDED TM-2 A/R (60) REQMNT TO -3 & -5	TM-2 A/R (60)					
	5							LEO 280-346	ADDED -7 (NHA LTM280-27743, ONE REQD)						
	6	1.00, 2.00 & 3.00					✓	EO B6 LCD 1329	ADDED -17 2 REQ/VEH. N/A: LDW280-53424 LM-3(33) & N/A: LDW280-54424 LM-4 (34) THRU LM-15 (45)	LM-3 THRU LM-15					
	7	1.00					✓	EO B7 LCD 1329 (B)	REF EO B6: ON -17 REMOVED EFF OF LM-4 THRU LM-15 N/A LDW280-54424, 2 REQD/MODULE H.O	LM-4 THRU LM-15		-17			

FOR CONTINUATION OF REVISIONS SEE SHEET _____

DWG 77.3 548

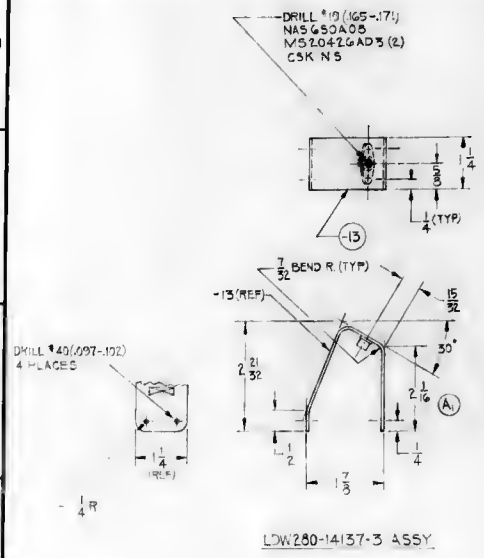
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-14132	B

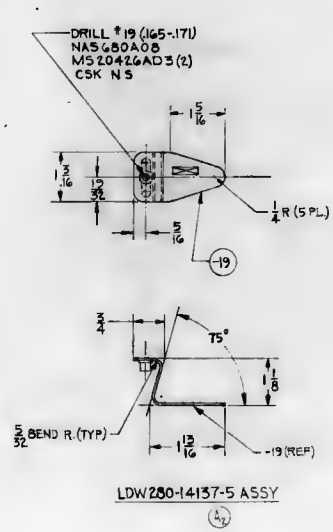
SCALE NONE SHEET 1.10

01 NAS 9-1100

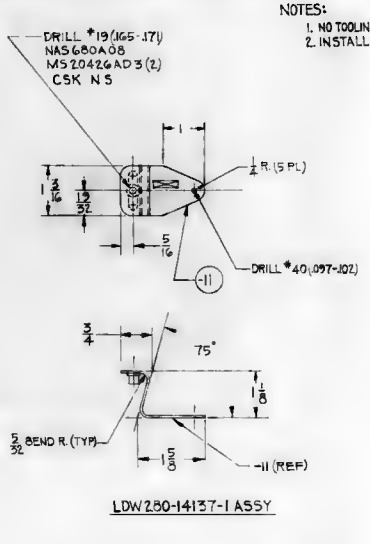
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. INSTALL FASTENERS PER LSP-14-15302.



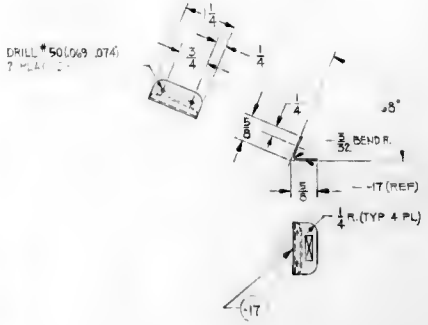
LDW280-14137-3 ASSY

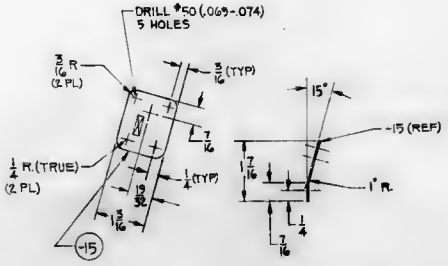


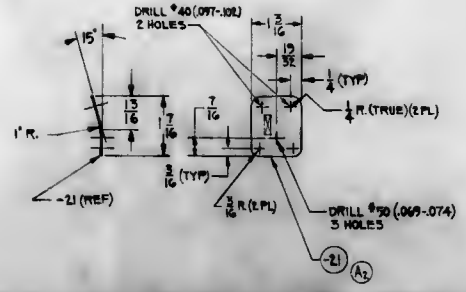
LDW280-14137-5 ASSY



LDW280-14137-1 ASSY







	E	28512	LDW280-14137 A

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
									RETRACED NO CHANGE LAST REVISION NO CHANGE. SH.1OF4 WAS 1OF 1.	NOT REQD	NOT	REQD	JAEGGI 9-3-68		
A	1	1.00 1.10 3.00						EO A1	ADDED CALLOUT DRILL "40 (.097-.102) (4 PL) TO LDW280-14138-15.	LTA-8, LEM-1,2	-15				
B	1	1.00 1.10							INC LEO 280-134	LTA-3, LEM3 THRU LM-6			E. STONHAM 4-22-69		
	2	1.00							INC EO B2	LEM 4 (34) THRU LEM-15 (45)					
	3	1.00							INC LEO 280-306	TM-2 A/R					
	4	1.00							INC EO B4	LEM-1,2					
	5	1.00							INC EO B5	LEM-7 (37) THRU LEM-15 (45)		W-32			
	6	1.00						(P)	INC. EO B6	LM-4 THRU LM-6					

FOR CONTINUATION OF REVISIONS SEE SHEET ____

ENG 77.3 5-66

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-14138	B

SCALE NONE — SHEET 1.1O

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10 2 & 3						EO A1	ADDED TO FLD ON-11,-13 NOTE "G PART" LDW280-14201-11-13 TO BE HOT FORMED AT 350°F ±10°F MAX ACCUMULATIVE TIME 10 MIN. FOR ALTERNATE METHOD SEE LSP-14-5300A PAR 3.3.1. ADD ON SHEET (2) IN PROC-SYM. COL. ON-11 & 13 SEE NOTE 6 (SH 10F 4 WAS SH 10F 3 ADDED SH 1.10	LTA-3 LEM-3,-4 -5,-6	✓		F PEPE 3/23/66 LB		
B	1	1, 1.10						LEO 280-204	FOR -11 & -13 ADDED LEM-7 THRU LEM-15 EFFECTIVITIES	LEM-7THRU-15	NOT	REQD	C MARTIN 9-10-66		
	2	1, 1.10					✓	EO B2	FOR -11,-13 IN N/A BLOCK LDW280-54406 WAS LDW 280-53406 LEM-4 (34) THRU -15 (45)	LEM-4THRU-15					

FOR CONTINUATION OF REVISIONS SEE SHEET

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

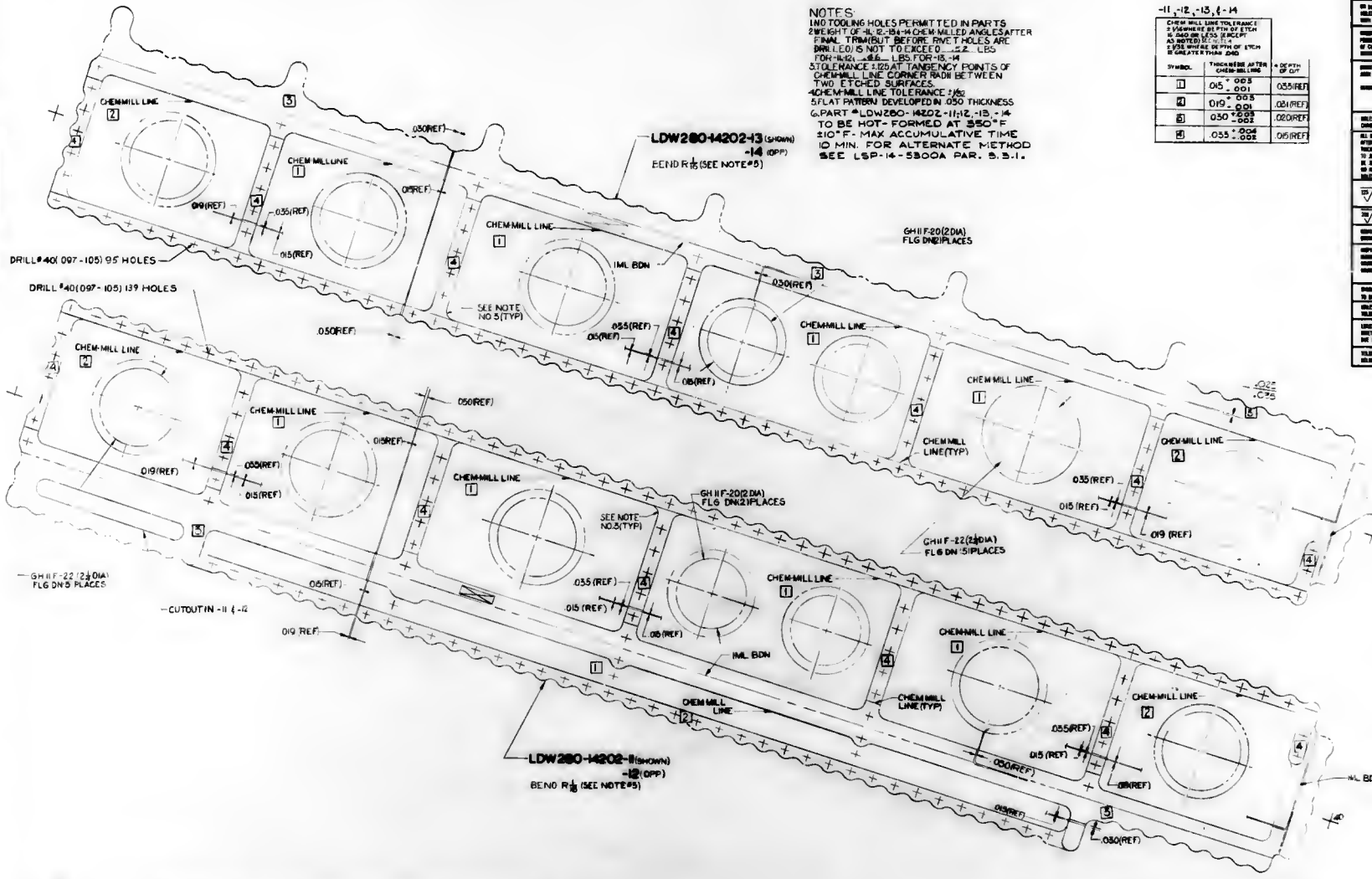
SIZE	CODE IDENT NO.		
B	26512	LDW280-14201	B

SCALE NONE SHEET 1.10

DWG 77.3 5-68

01

NAS 9-1100

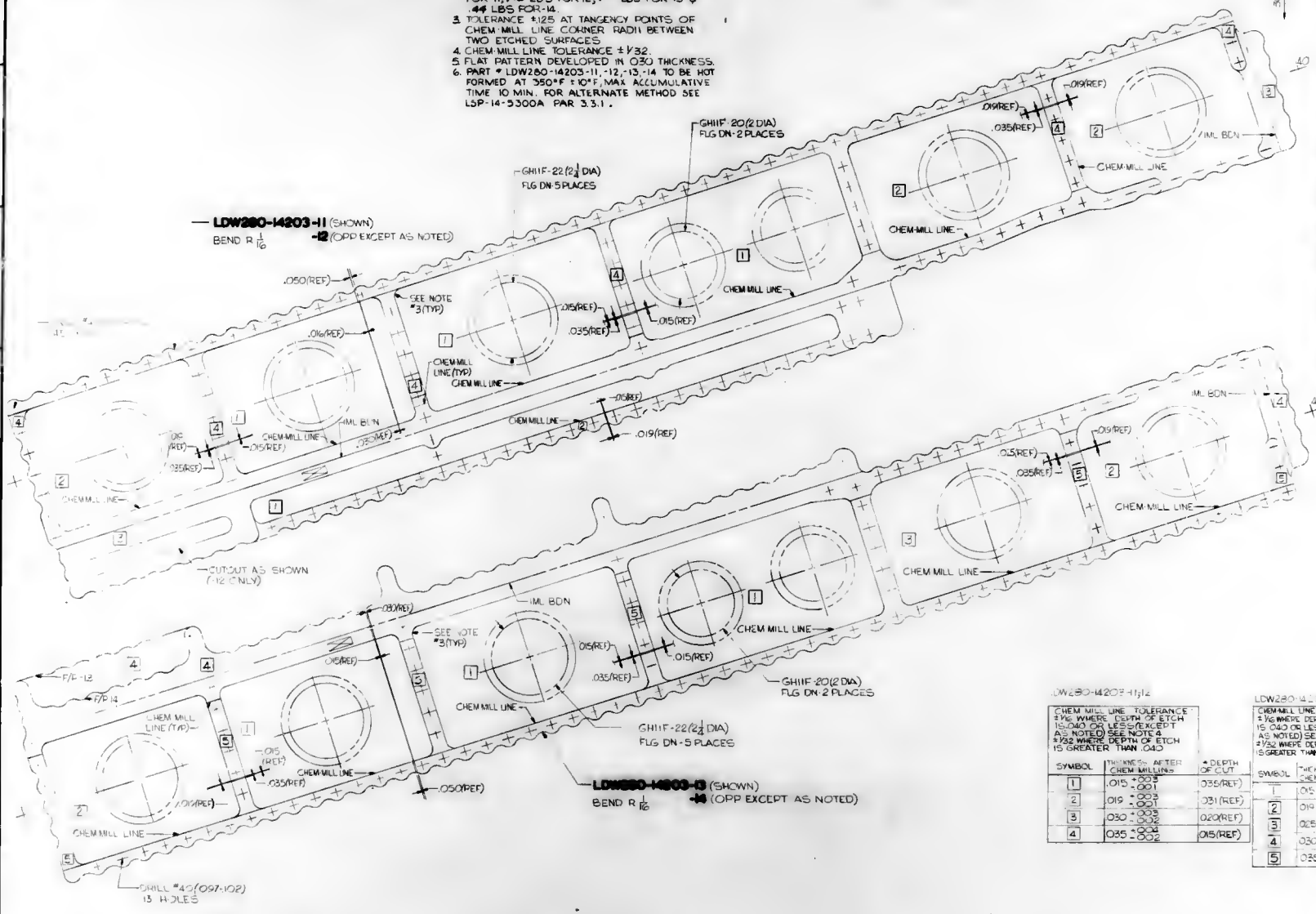

NOTES:
1 NO TOOLING HOLES PERMITTED IN PARTS
2 WEIGHT OF -11, -12, -13 & -14 CHEM-MILLED ANGLES AFTER FINAL TRIM BUT BEFORE RIVET HOLES ARE DRILLED IS NOT TO EXCEED .522 LBS FOR -11 & -12, .486 LBS FOR -13, -14
3 TOLERANCE ±.125 AT TANGENCY POINTS OF CHEM-MILL LINE CORNER RADII BETWEEN TWO ETCHED SURFACES.
4 CHEM-MILL LINE TOLERANCE ±1/32
5 FLAT PATTERN DEVELOPED IN .050 THICKNESS
6 PART # LDW280-14202-11, -12, -13, -14 TO BE HOT-FORMED AT 350°F ±10°F - MAX ACCUMULATIVE TIME 10 MIN. FOR ALTERNATE METHOD SEE LSP-14-5300A PAR. 5.3.1.
-11, -12, -13, & -14
CHEM MILL LINE TOLERANCE
1 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) EQUAL
2 USE WHERE DEPTH OF ETCH IS GREATER THAN .040
SYMBOL
THICKNESS AFTER CHEM-MILLING
DEPTH OF CUT
1 .015 +.005 -.001 .055 (REF)
2 .019 +.005 -.001 .081 (REF)
3 .030 +.003 -.002 .020 (REF)
4 .035 +.004 -.002 .095 (REF)
CHEM MILL LINE
.050 (REF)
.095 (REF)
.035 (REF)
.015 (REF)
.019 (REF)
.080 (REF)
IML BDN
DRILL #40 (.097 - .105) 95 HOLES
DRILL #40 (.097 - .105) 139 HOLES
LDW280-14202-13 (SHOWN) -14 (OPP)
BEND R 1/8 (SEE NOTE #5)
GH II F-20 (2 DIA) FLG DN (2) PLACES
SEE NOTE NO. 5 (TYP)
CHEM MILL LINE (TYP)
GH II F-22 (2 1/2 DIA) FLG DN (5) PLACES
CUTOUT IN -11 & -12
LDW280-14202-11 (SHOWN) -12 (OPP)
BEND R 1/8 (SEE NOTE #5)
.40
.095

01

NAS 9-1100

E	26512	LDW280-14202	A

NOTES:
1. NO TOOLING HOLES PERMITTED IN PART'S
2. WEIGHT OF -11,-12,-13 & -14 CHEM-MILLED ANGLES AFTER FINAL TRIM (BUT BEFORE RIVET HOLES ARE DRILLED) IS NOT TO EXCEED .49 LBS FOR -11, .48 LBS FOR -12, .49 LBS FOR -13 & .44 LBS FOR -14.
3. TOLERANCE ±.125 AT TANGENCY POINTS OF CHEM-MILL LINE CORNER RADII BETWEEN TWO ETCHED SURFACES
4. CHEM-MILL LINE TOLERANCE ± 1/32.
5. FLAT PATTERN DEVELOPED IN .030 THICKNESS.
6. PART # LDW280-14203-11,-12,-13,-14 TO BE HOT FORMED AT 350°F ±10°F, MAX ACCUMULATIVE TIME 10 MIN. FOR ALTERNATE METHOD SEE LSP-14-5300A PAR 3.3.1.



LDW280-14203-11,12

SYMBOL	THICKNESS AFTER CHEM MILLING	▲DEPTH OF CUT
1	.015 +.003 -.001	.035(REF)
2	.019 +.003 -.001	.031(REF)
3	.030 +.003 -.002	.020(REF)
4	.035 +.004 -.002	.015(REF)

CHEM MILL LINE TOLERANCE ± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) SEE NOTE 4. ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

LDW280-14203-13,14

SYMBOL	THICKNESS AFTER CHEM MILLING	▲DEPTH OF CUT
1	.015 +.003 -.001	.025(REF)
2	.019 +.003 -.001	.031(REF)
3	.025 +.003 -.002	.025(REF)
4	.030 +.003 -.002	.020(REF)
5	.035 +.004 -.002	.015(REF)

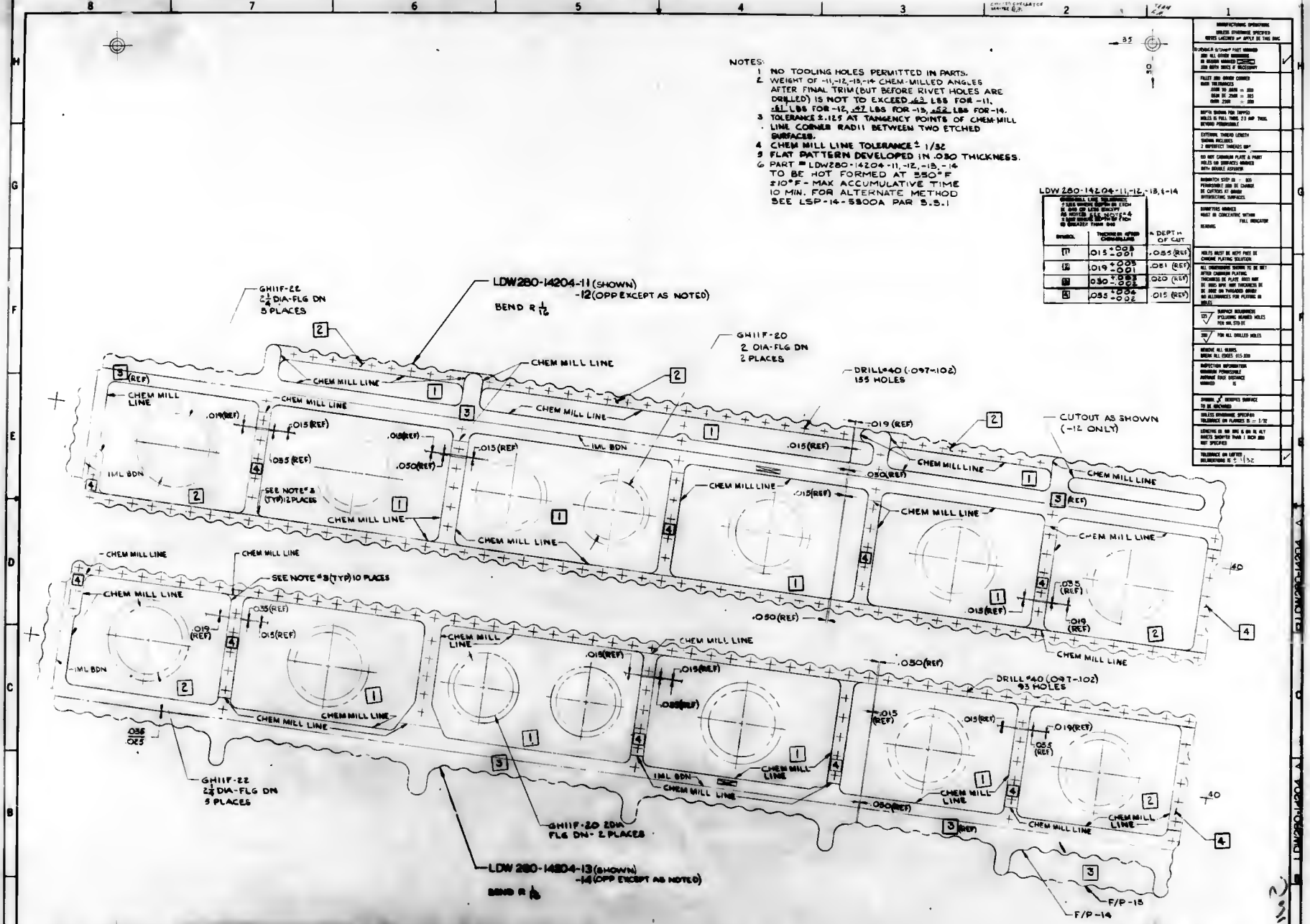
CHEM MILL LINE TOLERANCE ± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) SEE NOTE 4. ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

NAS 9-1100

REV	CODE IDENT NO.	DRAWING NO.	REV
	E 26512	LDW280-14203	A

SCALE 1 | SHEET

FOR PHOTO REPRODUCTION


NOTES:
1 NO TOOLING HOLES PERMITTED IN PARTS.
2 WEIGHT OF -11,-12,-13,-14 CHEM-MILLED ANGLES AFTER FINAL TRIM (BUT BEFORE RIVET HOLES ARE DRILLED) IS NOT TO EXCEED .63 LBS FOR -11, .61 LBS FOR -12, .47 LBS FOR -13, .62 LBS FOR -14.
3 TOLERANCE ±.125 AT TANGENCY POINTS OF CHEM-MILL LINE CORNER RADII BETWEEN TWO ETCHED SURFACES.
4 CHEM MILL LINE TOLERANCE ± 1/32
5 FLAT PATTERN DEVELOPED IN .030 THICKNESS.
6 PART = LDW280-14204-11, -12, -13, -14 TO BE HOT FORMED AT 550°F ±10°F - MAX ACCUMULATIVE TIME 10 MIN. FOR ALTERNATE METHOD SEE LSP-14-5500A PAR 5.5.1
LDW 280-14204-11,-12,-13,-14
DEPTH OF CUT
.055 (REF)
.081 (REF)
.020 (REF)
.015 (REF)
LDW280-14204-11 (SHOWN) -12 (OPP EXCEPT AS NOTED)
BEND R 1/16
GH11F-22 2 1/4 DIA-FLG DN 5 PLACES
GH11F-20 2 DIA-FLG DN 2 PLACES
DRILL #40 (.097-.102) 155 HOLES
CUTOUT AS SHOWN (-12 ONLY)
CHEM MILL LINE
IML BDN
SEE NOTE #3 (TYP) 12 PLACES
SEE NOTE #3 (TYP) 10 PLACES
.019 (REF)
.015 (REF)
.035 (REF)
.050 (REF)
DRILL #40 (.097-.102) 93 HOLES
GH11F-22 2 3/4 DIA-FLG DN 5 PLACES
GH11F-20 2DIA FLG DN - 2 PLACES
LDW 280-14204-13 (SHOWN) -14 (OPP EXCEPT AS NOTED)
BEND R 1/16
F/P-15
F/P-14
.036 .025
.40
NAS 9-1100
E 26512
LDW280-14204
A
SHEET 5
2 FOR PROPER REPRODUCTION USE 1

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10, 2, 3						E.O. A1	ADDED TO FIELD ON -11, -12, -13, -14 NOTE #6; PART #LDW280-14206-11, -12, -13, -14 TO BE HOT FORMED AT 350°F ± 10°F - MAX ACCUMULATIVE TIME 10 MIN. FOR ALTERNATE METHOD SEE LSP-14-5300 PAR. 3.3.1 ADDED ON SHEET (2) IN PROC-SYM COLUMN -11, -12, -13, -14 SEE NOTE #6 (SHEET 1 OF 4 WAS 1 OF 3, ADDED 1.10)	LTA-3 LEM-3, -4, -5, -6	✓		N. NILSSON 3-23-66 B		
B	1	1, 1.10						LEO280-204	FOR -11, 12, -13, -14 ADDED LEM-7(37) THRU LEM-15(45) EFFECTIVITY.	LEM-7 THRU-15	NOT REQD		R. COY 9-10-66 WU		
	2	1, 1.0					✓	E.O. B2	FOR -11, -12, -13, -14 IN N/A BLOCK LDW280-54411 WAS LDW280-53411 LEM-4(34) THRU LEM-15(45).	LEM-4 THRU-15	NOT REQD				

FOR CONTINUATION OF REVISIONS SEE SHEET

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

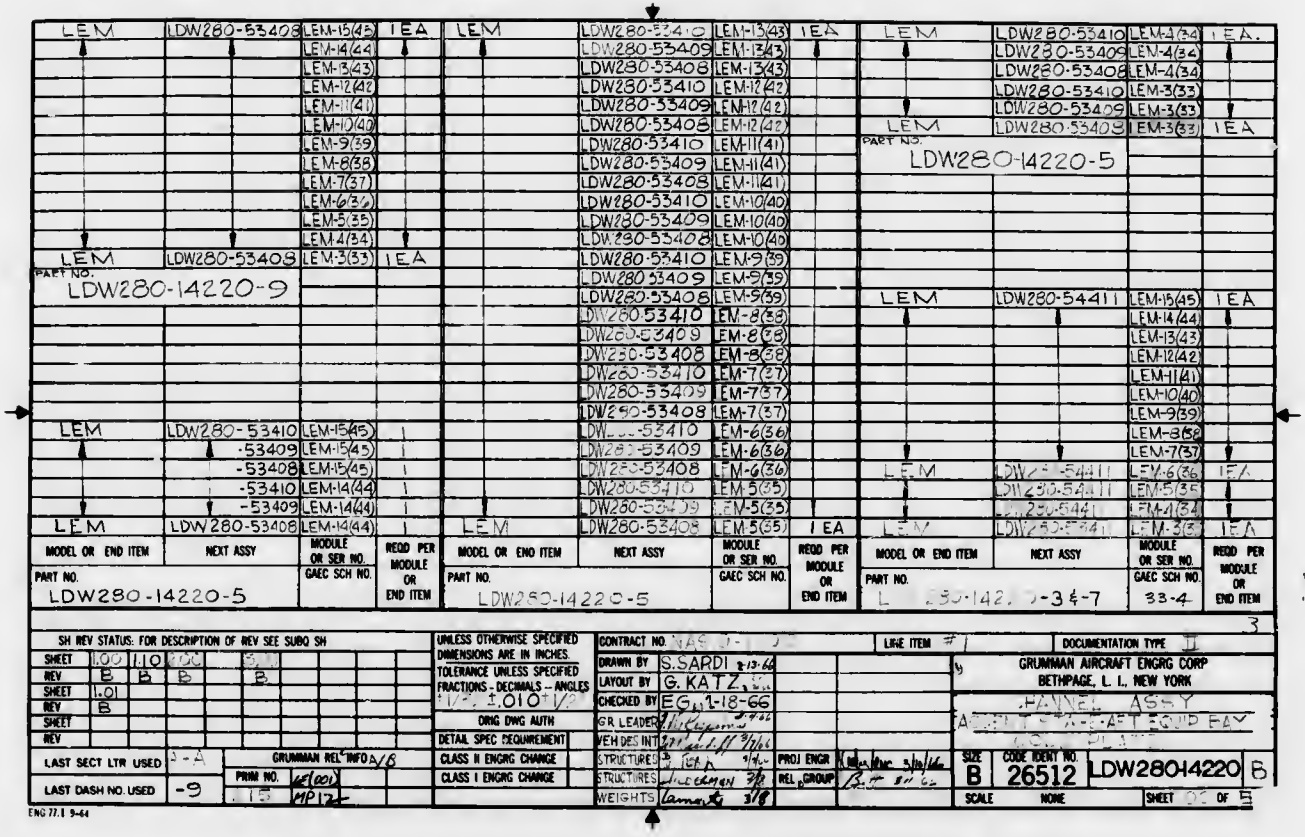
SIZE	CODE IDENT NO.		
B	26512	LDW280-14206	B

SCALE - NONE — SHEET 1.10

GAC 77.3 5-66

01

NAS 9-1100

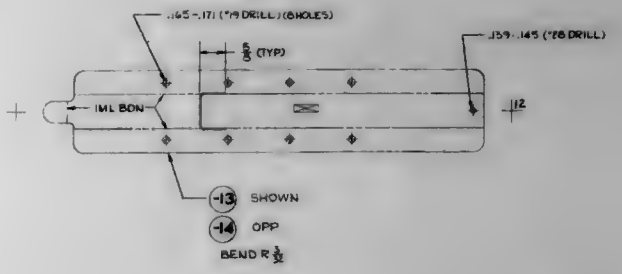

LEM
LDW280-53408
LEM-15(45) 1EA
LEM-14(44)
LEM-13(43)
LEM-12(42)
LEM-11(41)
LEM-10(40)
LEM-9(39)
LEM-8(38)
LEM-7(37)
LEM-6(36)
LEM-5(35)
LEM-4(34)
LEM-3(33) 1EA
PART NO.
LDW280-14220-9
LDW280-53410
LDW280-53409
LDW280-53408
LEM-15(45) 1
-53409 LEM-15(45) 1
-53408 LEM-15(45) 1
-53410 LEM-14(44) 1
-53409 LEM-14(44) 1
LDW280-53408 LEM-14(44) 1
LDW280-54411
LEM-15(45) 1EA
LEM-14(44)
LEM-13(43)
LEM-12(42)
LEM-11(41)
LEM-10(40)
LEM-9(39)
LEM-8(38)
LEM-7(37)
LEM-6(36) 1EA
LEM-5(35)
LEM-4(34)
LEM-3(33) 1EA
PART NO.
LDW280-14220-5
MODEL OR END ITEM
NEXT ASSY
MODULE OR SER NO.
GAEC SCH NO.
REQD PER MODULE OR END ITEM
33-4
SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBD SH
SHEET 1.00 1.10 2.00 3.00
REV B B B B
SHEET 1.01
REV B
SHEET
REV
LAST SECT LTR USED A-A
LAST DASH NO. USED -9
GRUMMAN REL INFO A/B
PRIM NO. 4(001)
.15 MP12
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
+/- .010 +/-1/2
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE
CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II
DRAWN BY S.SARDI 2-13-64
LAYOUT BY G.KATZ
CHECKED BY EG 1-18-66
GR. LEADER
VEH DES INT
STRUCTURES
STRUCTURES
WEIGHTS
PROJ ENGR
REL. GROUP
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK
PANEL ASSY
SIZE B
CODE IDENT NO. 26512
LDW28014220 B
SCALE NONE
SHEET 02 OF 5
ENG 77.1 9-44

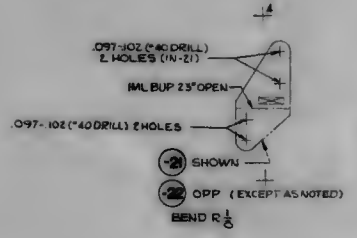
01

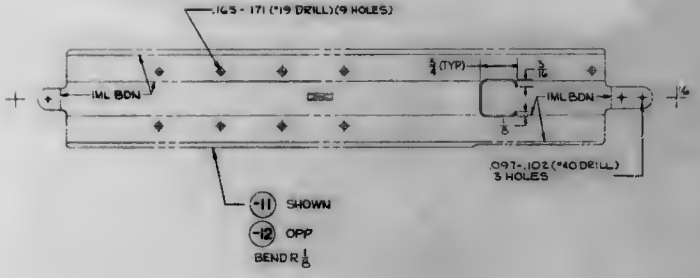
NAS 9-1100

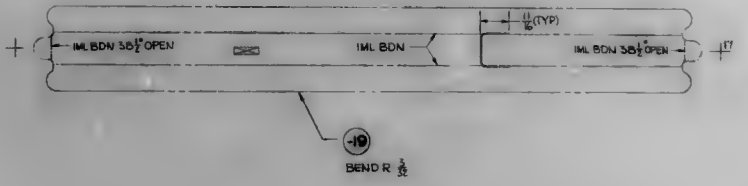
NOTES

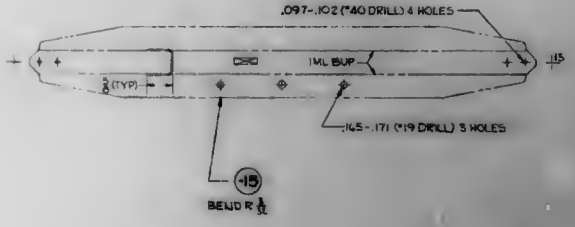
1. NO TOOLING HOLES PERMITTED IN PARTS.

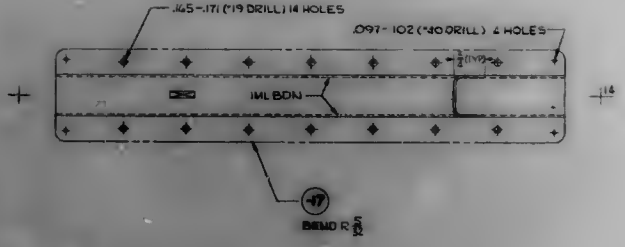






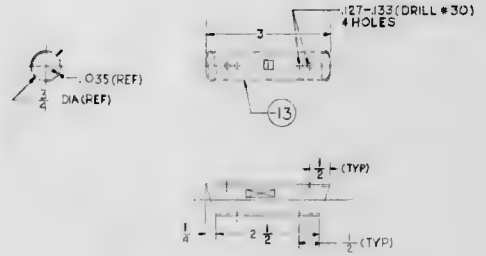






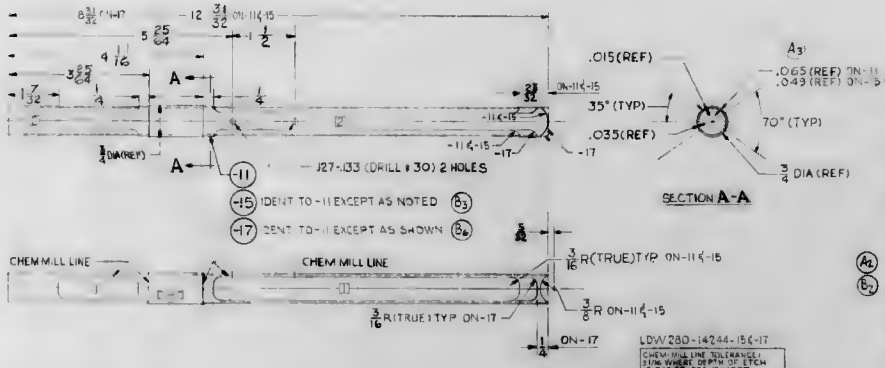
	E	26512	LDW280-14237 A

LDW280-14237 A



NOTES

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ~~WATER-L SHALL MEET MIL-A-8920 FOR CHEMICAL COMPOSITION AND WW-T-700C FOR TOLERANCE AND TENSILE TESTING ONLY.~~
3. ~~MATERIAL 2219-T62 ALALLOY DRAWN TUBE CHEMICAL COMPOSITION PER MIL-A-8920 WITH PROPERTIES AS FOLLOWS:~~
   - ~~LONGITUDINAL Ftu 54000 PSI MIN~~
   - ~~LONGITUDINAL Fty 42000 PSI MIN~~
   - ~~ELONGATION 6 % MIN~~



SECTION A-A

LDW280-14244-11

CHEM MILL LINE TOLERANCE:
±.005 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED)
±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT (A3)
1	.015 +.005 -.001	.030 (REF)
2	.035 +.005 -.001	.030 (REF)

(A2) (B2)

LDW280-14244-13

CHEM MILL LINE TOLERANCE:
±.005 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED)
±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT (A3)
1	.035 +.005 -.001	.030 (REF)

(B2)

LDW280-14244-15 & -17

CHEM MILL LINE TOLERANCE:
±.005 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED)
±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT
1	.015 +.005 -.001	.034 (REF)
2	.035 +.005 -.001	.014 (REF)

0 1 MAS 9-1100

		GRUMMAN AIRCRAFT ENGG. CORP. BETHPAGE, L. I., NEW YORK	
		SIZE D	26512 LDW280-14244
		SCALE NONE	SHEET 3 OF 3

LDW280-14244 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

E.O. LEO 280 | EO NO 337
CONTROL INFO NO. LM-3-4200

ON THE FOLLOWING DRAWING DETAILS REVISE
CHEM-MILL TOLERANCE ±.887 WAS ±.003 ±.002

* USE APPLICABLE DASH NO IN DESCRIP OF EO

DRAWING NO	DASH NO	CHANGE NO.	EFFECTIVITY
LDW280-14274	-11-13	B2	LTA-3(13) LM-3(33) THRU LM-6(36)
LDW280-14330	-11-13	B3	LTA-3(13) LTA-8(18) LM-1(31) THRU LM-3(33)
LDW280-14331	-11-13	B6	
LDW280-14332	-11	C1	
LDW280-14333	-11	B4	
LDW280-14334	-11 THRU -17	B3	
LDW280-14335	-19	B2	
LDW280-14336	-11	B2	LTA-3(13) LTA-8(18) LM-1(31) THRU LM-3(33)
LDW280-14343	-11 THRU-21	C1	LTA-3(13) LM-3(33) THRU LM-15(45)
LDW280-14347	-11 THRU-21	B1	LTA-3(13) LM-3(33) THRU LM-15(45)
LDW280-14348	-11 THRU-17	B1	LTA-3(13) LM-3(33) THRU LM-15(45)

DETAIL SPEC NO. | CL II CHRGE CHG | CL I CHRGE CHG

PROVIDE MORE REALISTIC TOLERANCE.

REF: LAV280-251 "A"

DESCRIPTION OF EO
FOR - * REVISE
CHEM-MILL TOL. ±.005 ±.001 WAS ±.003 ±.002

MODEL	EFFECTIVITY: PRECEDING ACTIVITY NO.	EFFECTIVITY: BASIC UNIT NO.	EFFECTIVITY: DUO CONTR UNIT NO.
LM		NOTED	

CHANGE PERIOD: V | DISPOSITION OF PARTS: NOT READ

APPROVED BY: VM | DATE: 8/16

BM | 10/24 | 10/26/66 | 10 26 66

PRIORITY C

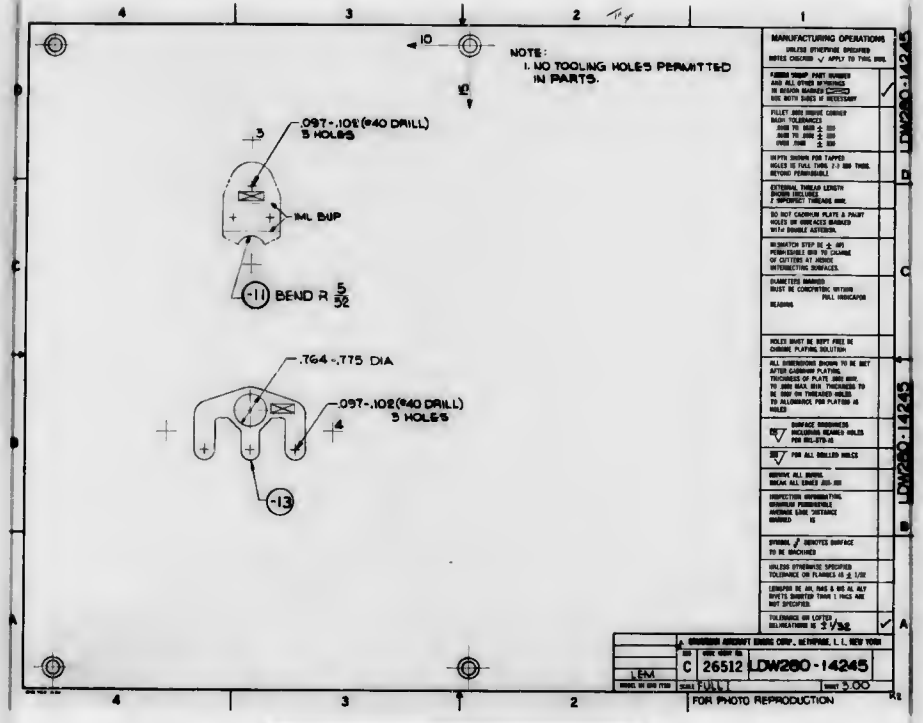
DRAWING TITLE: STRUTS ASCENT STAGE-SHIELD TRUSS

E.O. LEO 280 | EO NO. 337

ISSUED BY LIAISON / VIC BOLLO x2151 SECTION VDI GROUP NO. 335 PL 35 ENG

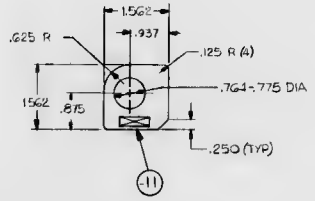
01

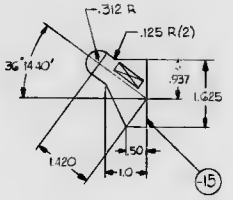
NAS 9-1100

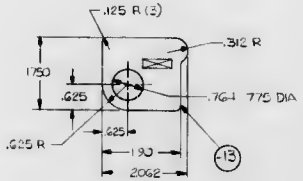

NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.
.097-.102 (#40 DRILL) 3 HOLES
IML DUP
BEND R 5/32
.764-.775 DIA
.097-.102 (#40 DRILL) 3 HOLES
MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
LDW280-14245
LEM
C
26512
LDW280-14245
SCALE FULL
SHEET 3 OF 3
FOR PHOTO REPRODUCTION

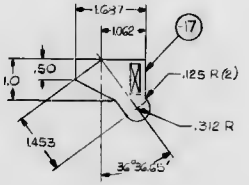
01
NAS 9-1100

NOTES
1. NO TOOLING HOLES PERMITTED IN PARTS.





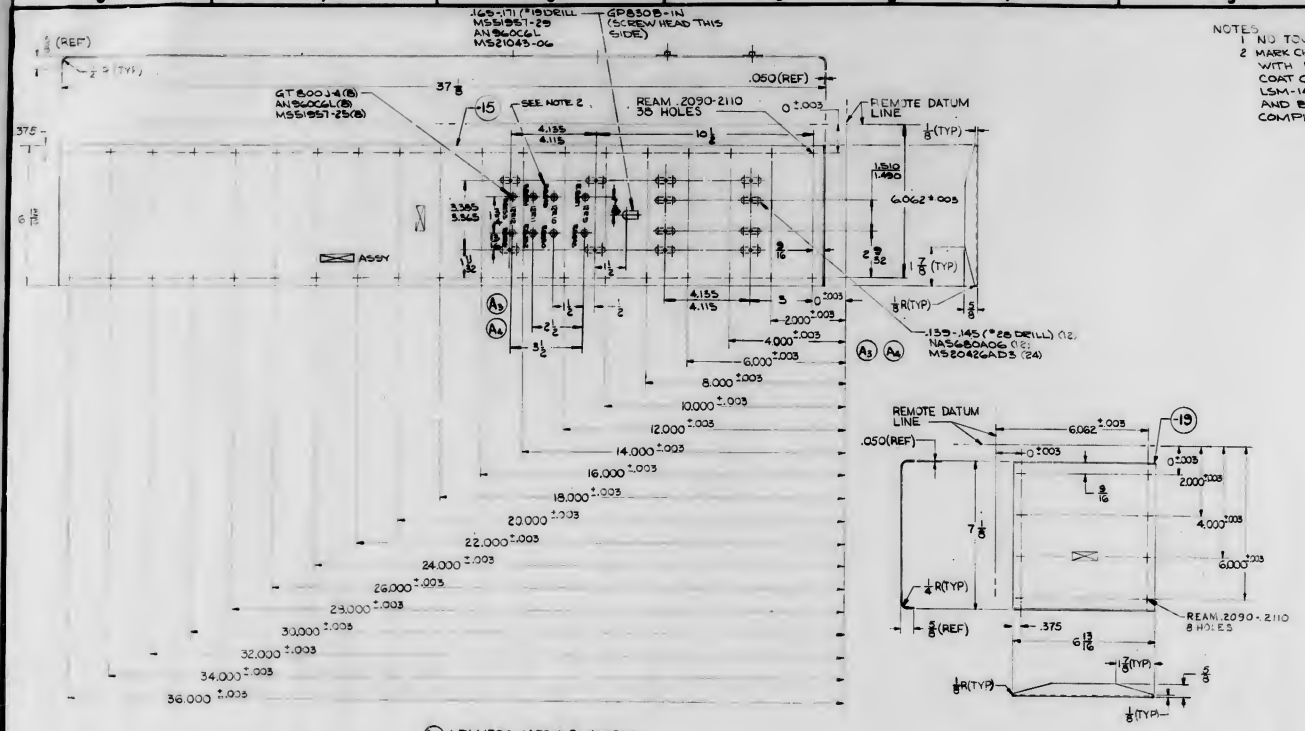




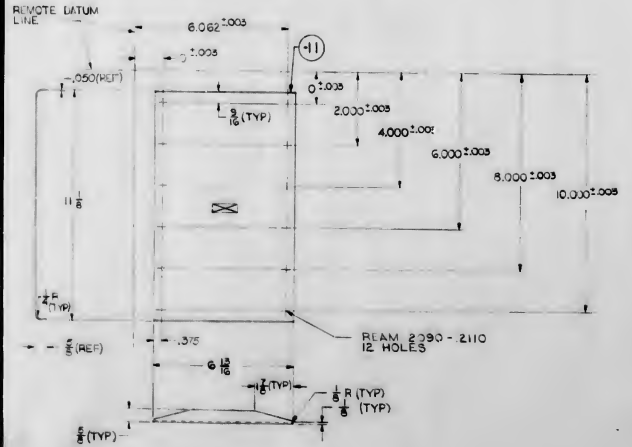
		D 26512	LDW280-14249 A

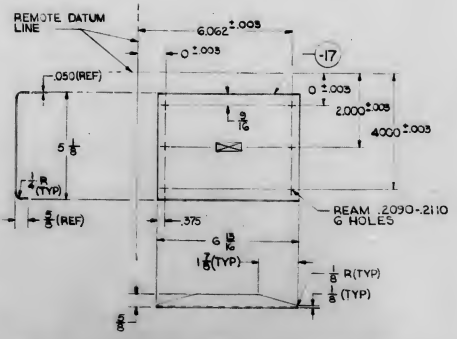
LDW280-14249 A

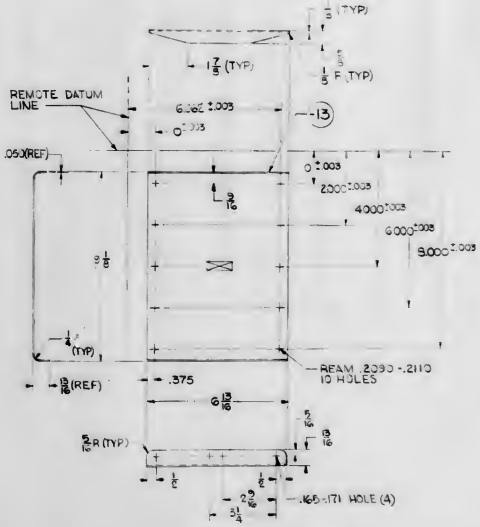
MIL-D-1100



A LDW280-14254-3 ASSY

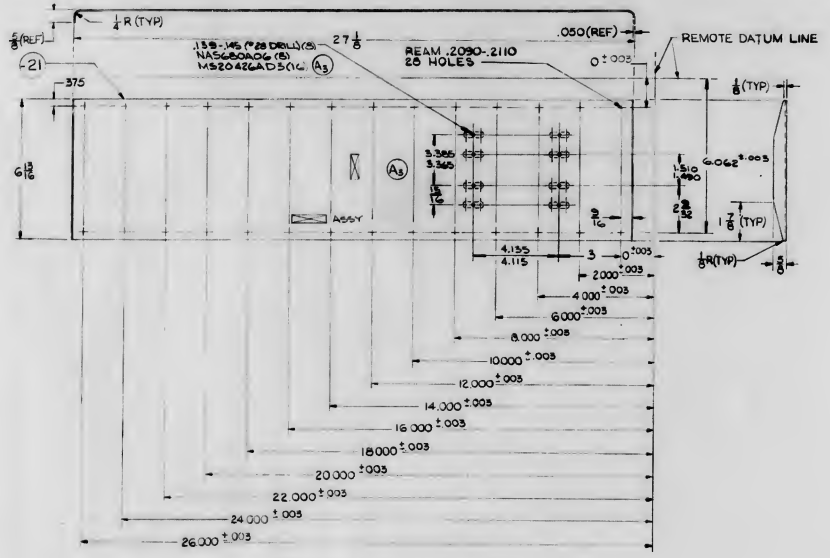




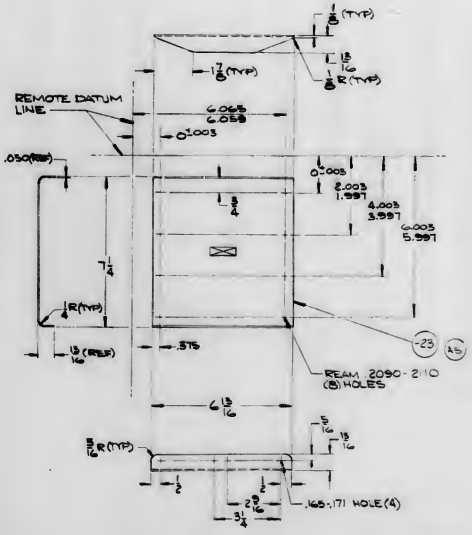


NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. MARK CHARACTERS 1/8 HIGH IN ACCORDANCE WITH LSP 14-002 TYPE XII CL-2 COVER COAT CHARACTERS USING EPON 9.6 LSM-14-4103. MIX PER LSP14-14102 AND BRUSH APPLY A THIN COAT TO COMPLETELY COVER CHARACTERS.

E	28512 LDW280-14254



(A1) LDW280-14254-1 ASSY



[redacted]

E	28512	LDW280-14254

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32 3 REV 3 65

ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 533
CONTROL INFO NO. LDW280A 5977

TO THE FOLLOWING DWG'S LISTED BELOW, ADD PA-1 (WS) EFFECTIVITY

DWG Nº	DASH Nº	REQ'D WHEN	DWG TITLE	NHA	CHG Nº
			SEE DWG		
LDW280-14323	-11,-13,-19,-20	1 EA		LTM280-26896	
	-15,-17	2 EA			B2
-14324	-11,-13	1 EA			B1
-14329	-19,-21	1 EA			B3
-14339	-21,-23	1 EA			B3
-14345	-7,-8	4 EA			B2
M14927	-3,-4	1 EA			A4
M14928	-1	1		LTM280-26896	A4
-14318	-1,-2	1 EA		LTM280-26891	B1
-14331	-21,	2		LTM280-26891	C1
-14335	-1,-2	1 EA		LTM280-26891	C1
-14309	-1	1		LTM280-26891	B1
P14401	-1	1		LDW280-14309	A3
M14931	-1	1		LDW280-14309	A1
	-1	1		LTM280-26891	
P14400	-11,-12	1 EA		LTM280-26891	B1
	-15	2		LTM280-26896	
P11521	-13	8	SEE DWG	LTM280-26883	A6
LDW280M11164	-1	1	SEE DWG	LTM280-26876	B2
LDW280-11645	-11,-13,-15	1 EA	SEE DWG	LDW280-53161	A3
LDW280M11035	-11	1	SEE DWG	LDW280-53222	A2
LDW280-14440	-33	6	SEE DWG	LTM280-26886	B4
LDW280-14344	-7	16	SEE DWG	LTM280-26887	D4
	-11	8	SEE DWG		

DETAIL SPEC REQ | CL I ENGRG CHG | CL I ENGRG CHG | LCD 19-1124

REASON FOR EO: UPDATE DWG REQTS FOR PA-1

FOR: ADDED PA-1(WS) REQTS.

DESCRIPTION OF EO

GAEC EO RELEASE: 3 JS 4/1/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO.
LM		PA-1(WS)	

DRAWING CHANGE REQD: ✓ (REVISE DWG; RECORD ED)

DISPOSITION OF PARTS: USE; REWORK; SCRAP

APPROVED BY: DATE 3/20/67; #5; VDI; SUPPORT

RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

PRIORITY: C

DRAWING TITLE: NOTED ABOVE

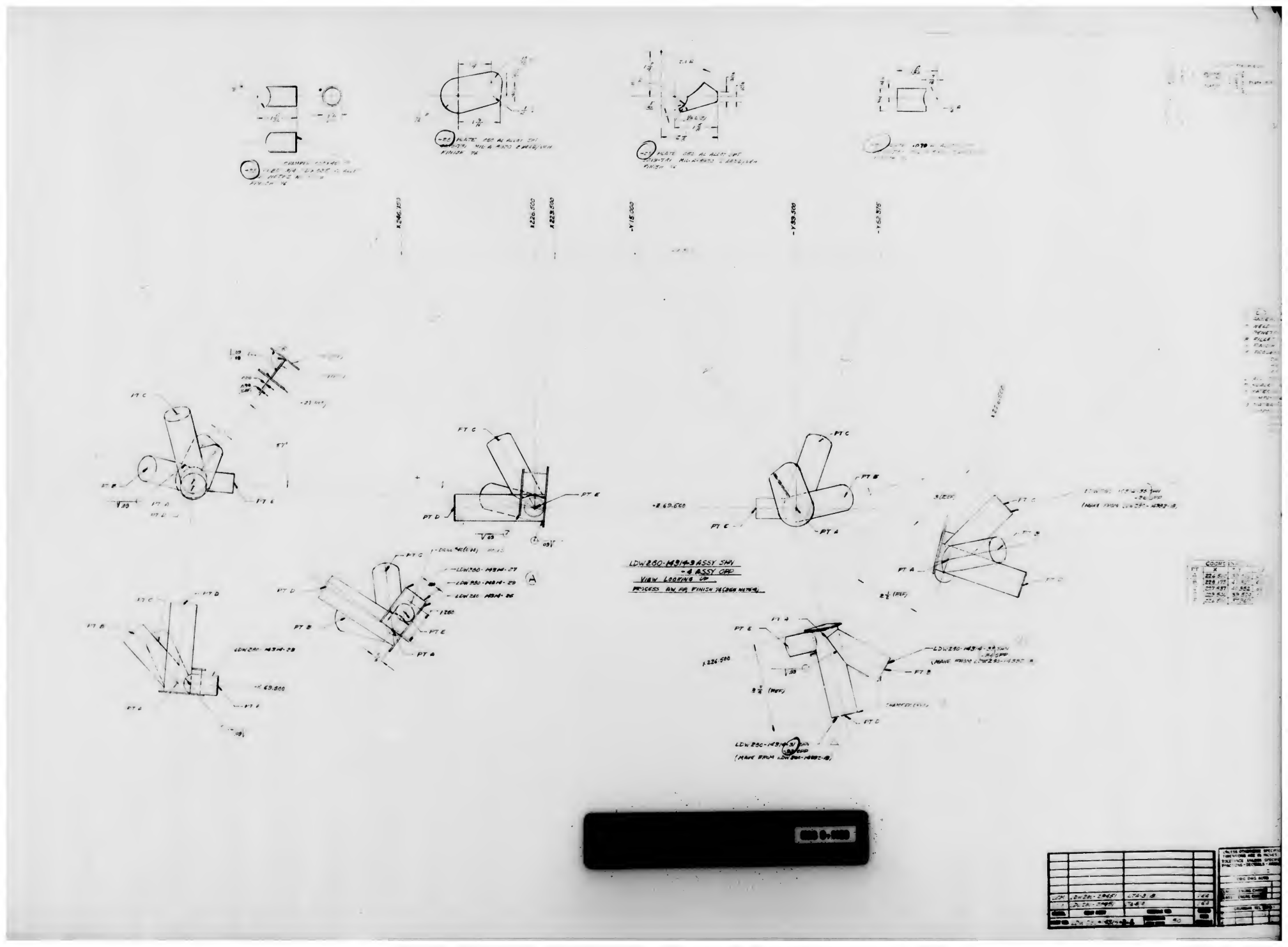
DRAWING NO: LEO 280

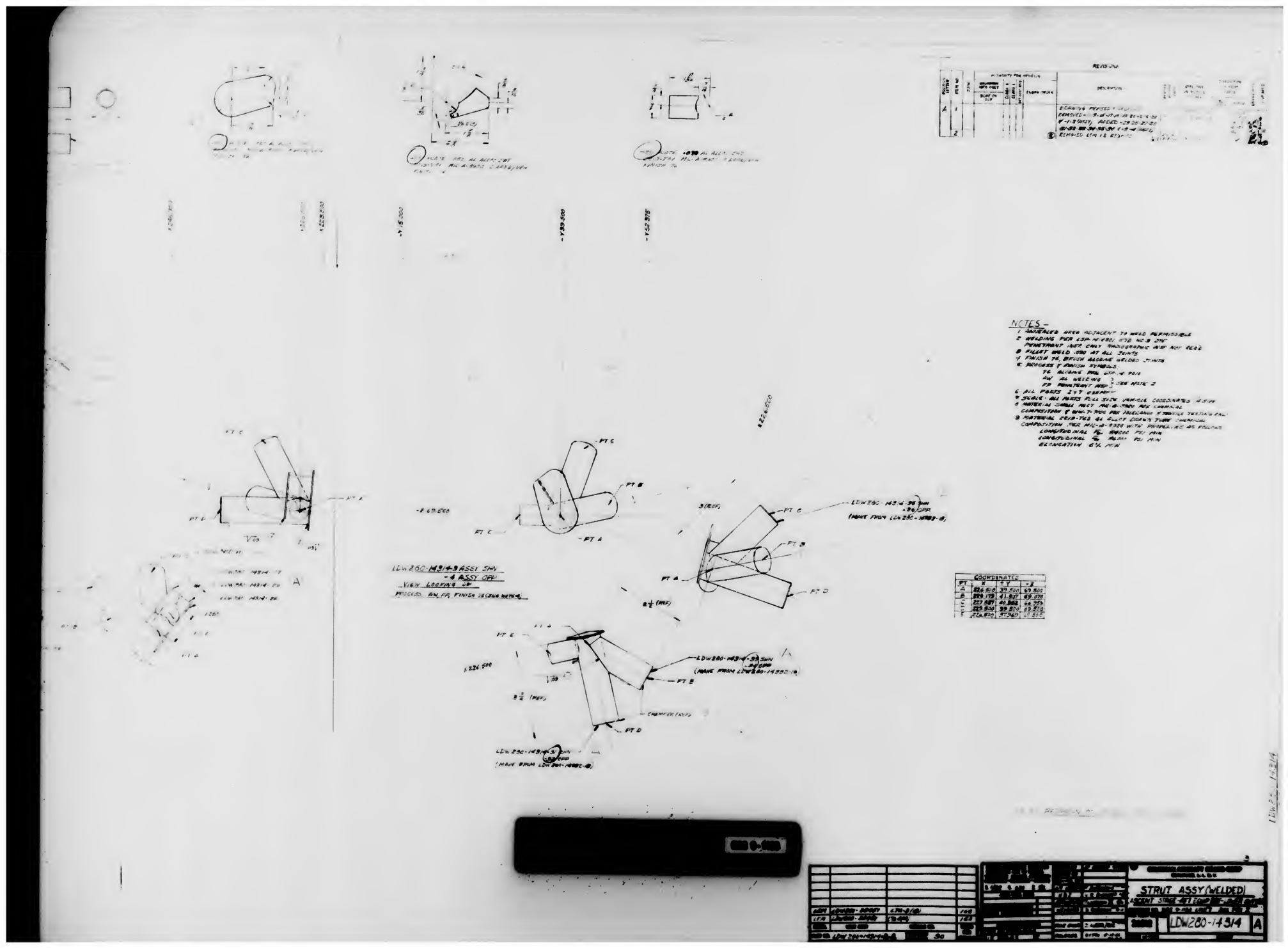
EO NO: 533

ISSUED BY M. SHAPIRO X1302 SECTION VD1 GROUP NO. 275 PL 24

NAS 9-1100

01


X 246.163
X 226.500
X 223.500
-Y 15.000
-Y 39.500
-Y 50.575
LDW 250-M314 ASSY SHN
-4 ASSY OPP
VIEW LOOKING UP
PROCESS AN, FA FINISH 74 (266 MICRO)
PT A
PT B
PT C
PT D
PT E
2 1/2 (REF)
9 1/2 (REF)


NOTES
1. UNPAINTED AREA ADJACENT TO WELD PERMISSIBLE
2. WELDING PER LDA M-9512, ATTD NO 3 EXC PENETRANT INSP ONLY RADIOGRAPHIC NOT REQ'D
3. FILLET WELD .050 AT ALL JOINTS
4. FINISH 7A, BRUSH BLEND WELDED JOINTS
5. PROCESS & FINISH STAINLESS
7A ALUMINA PER LDP-4 9018
AN AL WELDING
FD PENETRANT INSP
SEE NOTE 2
6. ALL PARTS 1ST ELEMENT
7. SCALE: ALL PARTS FULL SIZE VEHICLE COORDINATES U.S.N.
8. MATERIAL SHALL MEET MIL-B-7120 FOR CHEMICAL COMPOSITION & HEAT TREAT PROC FOR TOLERANCE STRENGTH TESTING ETC
9. MATERIAL 2218-T62 AL ALLOY FORGING STOCK CHEMICAL COMPOSITION PER MIL-A-8920 WITH PROPERTIES AS FOLLOWS
LONGITUDINAL Ftu 58000 PSI MIN
LONGITUDINAL Ty 46000 PSI MIN
ELONGATION 6% MIN
LDW280-14314-9 ASSY SHN
-4 ASSY REQ
VIEW LOOKING UP
PROCEED AN FD FINISH 7A (See NOTE 4)
LDW280-14314-93 SHN
-24 REQ
(MAKE FROM LDW280-14302-13)
LDW280-14314-95 SHN
-24 REQ
(MAKE FROM LDW280-14302-13)
COORDINATES
PT A 224.500 39.400 69.806
B 209.178 41.927 69.278
C 217.887 40.983 66.973
D 229.836 39.820 63.870
E 224.500 37.540 67.577
STRUT ASSY (WELDED)
LDW280-14314
A